GROUP 42C

WIRELESS CONTROL MODULE (WCM)

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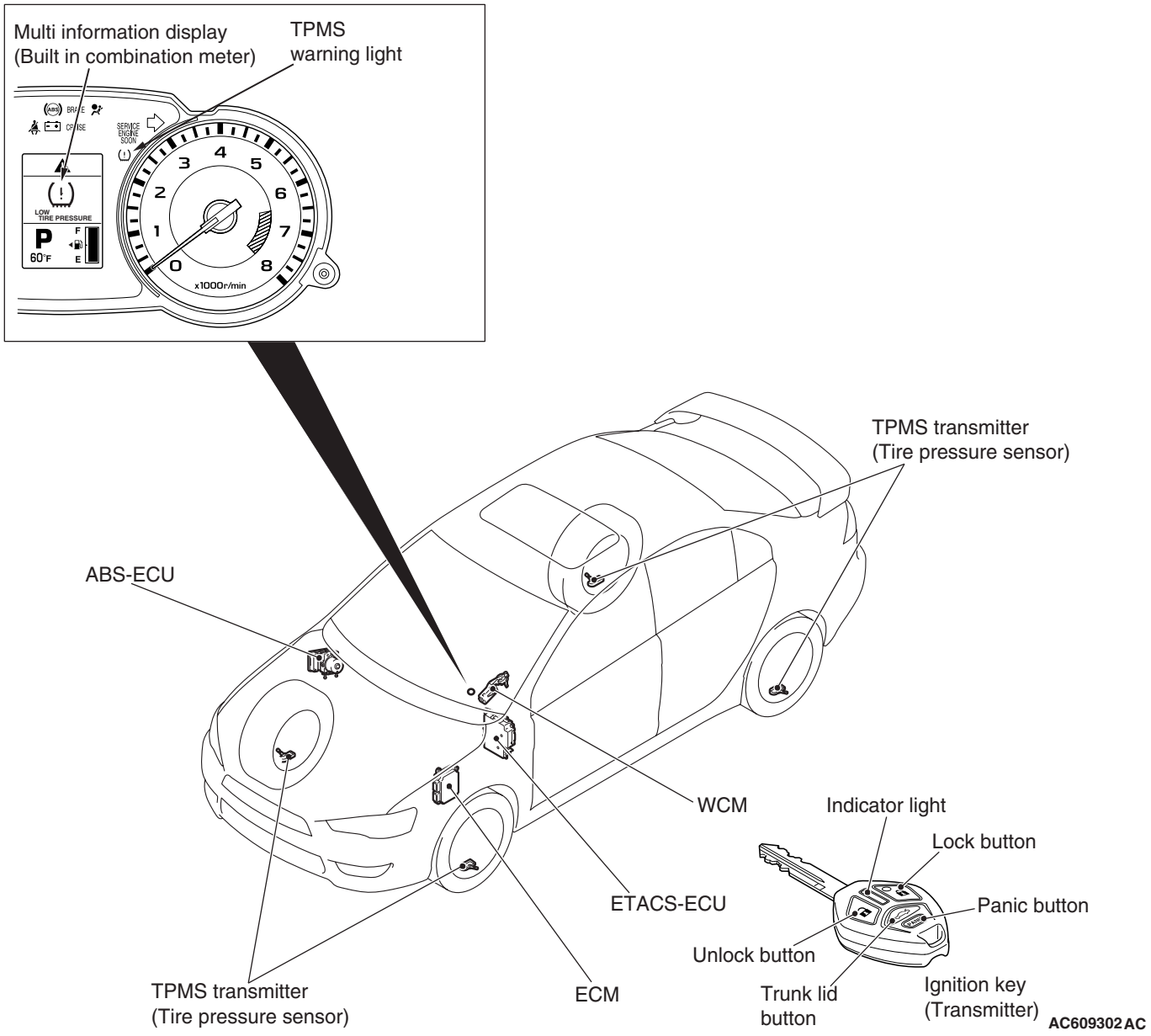
GENERAL INFORMATION

M1427500100027

The wireless control module (WCM) is a system that integrates the keyless entry function, immobilizer function, and the TPMS function, and it has the following features:

- The ignition key (transmitter) incorporates a lock/unlock/trunk lid button and a panic button, and can be operated by remote control. The ignition key also incorporates an indicator light that enables the driver to check if the signal is transmitted correctly or if the battery in the key is discharged.
- The ignition key incorporates the immobilizer function that inhibits starting the engine by using an unauthorized key.
- The incorporated TPMS function monitors the air pressure of all tires (except spare tire).
- Each vehicle is provided with two ignition keys (transmitter), and up to eight ignition keys can be registered.
- Settings of the keyless entry function can be adjusted using a configuration function.

CONSTRUCTION DIAGRAM



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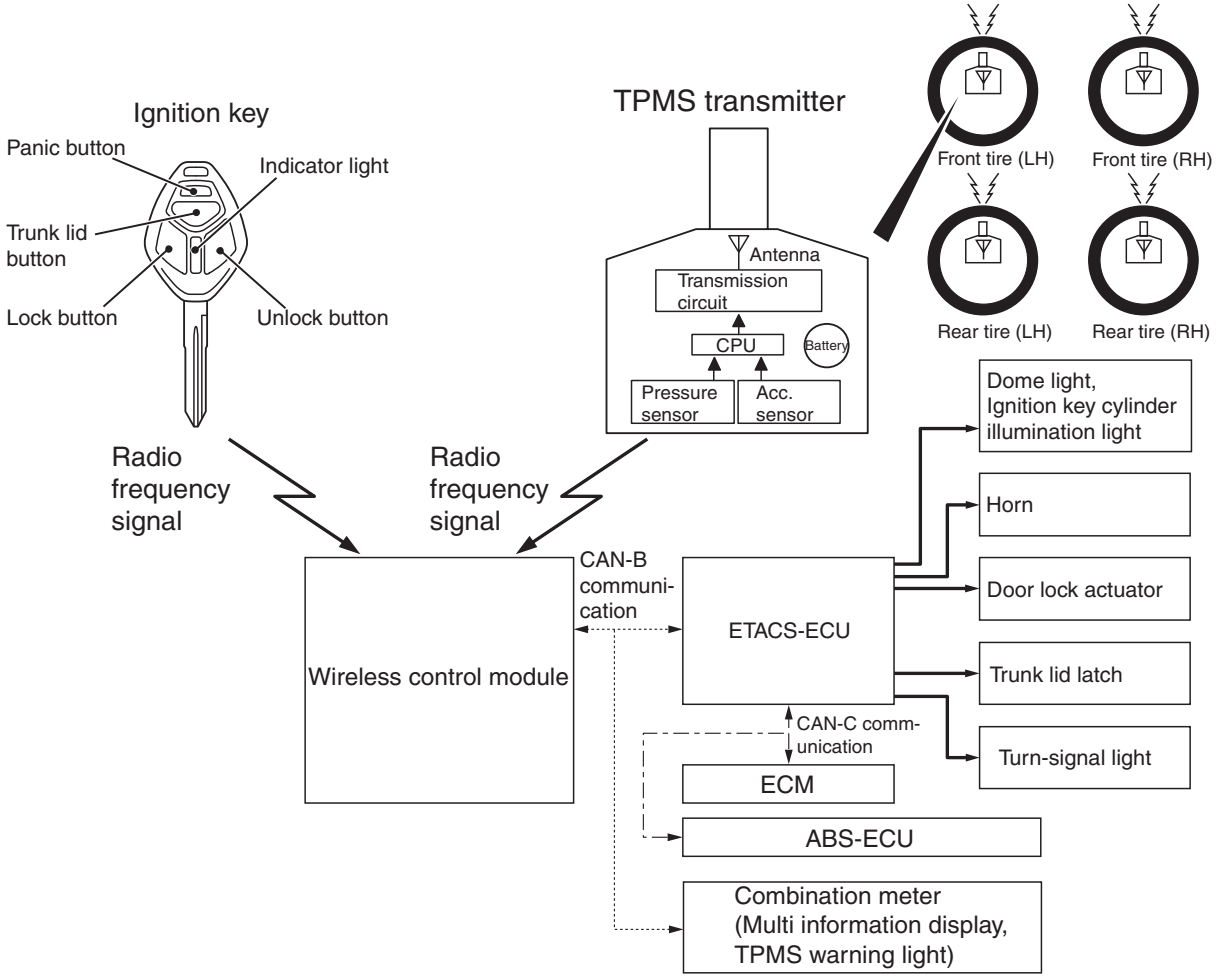
Main components and functions

Parts name	Functional description
WCM	Controls the keyless entry functions, TPMS functions and starting of the engine by using the following communications. • Communications with ETACS-ECU, ECM, ABS-ECU <vehicles for ABS> and combination meter via CAN • Wireless communication with the ignition key (transmitter) • Wireless communication with the TPMS transmitter
Ignition key (transmitter)	The ignition key (transmitter) receives signals sent from WCM, certifies the key ID code, calculates the key ID, and sends the reply data signal to WCM. The ignition key (transmitter) also sends signals to WCM when the lock/unlock/trunk lid button and the panic button on it are operated. Warning symbol and message is additionally displayed on the Multi information display.
Combination meter (Multi information display, TPMS warning light)	Communicates with WCM via CAN. Receives the warning request or warning information from WCM, activates* the TPMS warning light. Warning symbol and message is additionally displayed on the multi information display.
ETACS-ECU	Communicates with WCM via CAN. Send ignition switch status. Receives the door lock/unlock request from WCM, outputs the lock/unlock signal and flashes the turn signal light to inform the driver that the doors are locked/unlocked.
ABS-ECU	Communicates with WCM via CAN. Sends the vehicle speed data <Vehicles with ABS>.
ECM	Communication with WCM via CAN. Send atmospheric pressure data. Sends the vehicle speed data <Vehicles without ABS>.
TPMS transmitter	Measure tire pressure directly, then send radio frequency signal to WCM.

NOTE:

- **: Illuminates for tire pressure warning.*
- **: Flashes for about 1 minute and then continuously illuminated for TPMS malfunction warning.*

System configuration



AC609283AB

NOTE: In case of replacement of WCM, all keyless ID, key ID and tire pressure sensor ID should be re-registered using scan tool MB991958 (M.U.T.-III sub-assembly).

SERVICE SPECIFICATIONS

M1427501500028

Item	Standard value
Voltage of transmitter battery (V)	2.5 ~ 3.2

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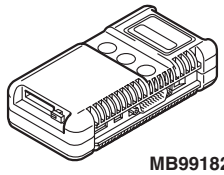
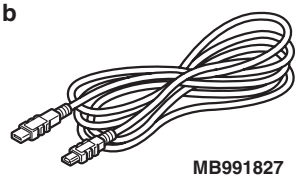
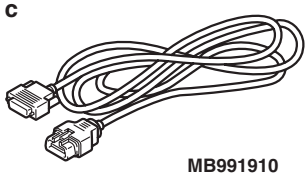
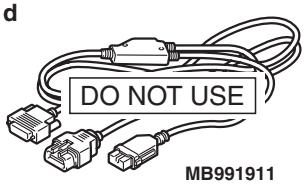
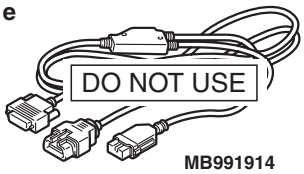
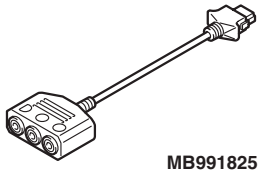
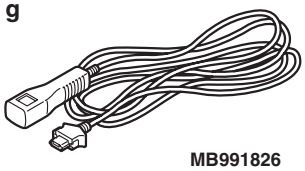
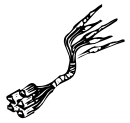
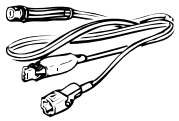
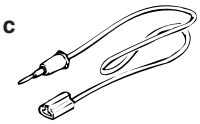
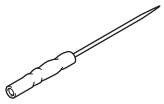
SPECIAL TOOL

M1427501300024

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Daimler Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle.** ETACS-ECU check (Diagnostic trouble code, service data)

Tool	Tool number and name	Supersession	Application
a  b  c  d MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector. a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	–	Making voltage and resistance measurement during troubleshooting

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1427504600035

Refer to GROUP 00 –How to Use Troubleshooting/Inspection Service Points, Contents of Troubleshooting P.00-6.

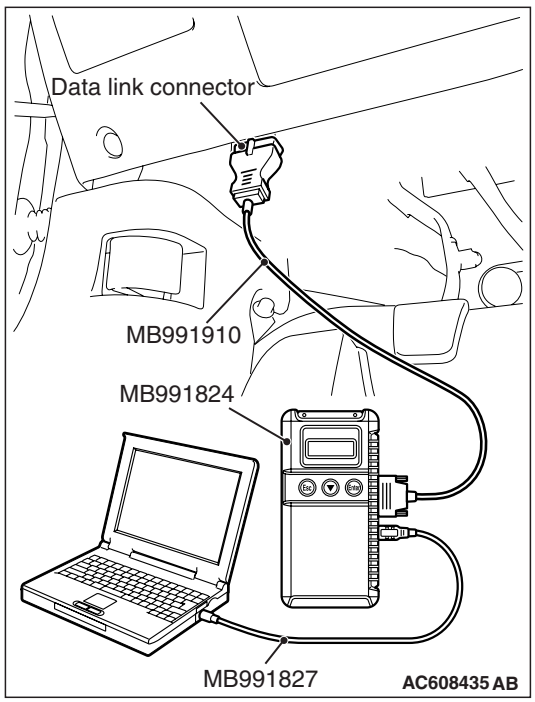
DIAGNOSTIC FUNCTION

M1427501400032

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "ETACS" from "System List", and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code."
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

HOW TO DIAGNOSE THE CAN BUS LINES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)

- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "CAN bus diagnosis" from the start-up screen.
4. When the vehicle information is displayed, confirm that it matches the vehicle being diagnosed.
   - If they match, go to step 8.
   - If not, go to step 5.
5. Select the "view vehicle information" button.
6. Enter the vehicle information and select the "OK" button.
7. When the vehicle information is displayed, confirm again that it matches the vehicle being diagnosed.
   - If they match, go to step 8.
   - If not, go to step 5.
8. Select the "OK" button.
9. When the optional equipment screen is displayed, choose the one which the vehicle is fitted with, and then select the "OK" button.

CHECK OF FREEZE FRAME DATA

The freeze frame data can be checked by using scan tool MB991958 (M.U.T.-III sub assembly).

When detecting fault and storing the diagnosis code, the ECU connected to CAN bus line obtains the data before the determination of the diagnosis code and the data when the diagnosis code is determined, and then stores the ECU status of that time. By analysing each data from scan tool MB991958 (M.U.T.-III sub assembly), the troubleshooting can be performed more efficiently. The displayed items are as the table below.

Display item list

Item No.	Item name	Data item	Unit
1	Odometer	Total driving distance after the diagnosis code is generated	km
2	Ignition cycle	Number of times the ignition switch is turned "ON" or "LOCK (OFF)" after the past failure transition	Number of counts is displayed.
4	Accumulated minute	Cumulative time for current malfunction of diagnosis code	min

ID CODES REGISTRATION JUDGMENT TABLE

M1427504400042

⚠ CAUTION

Do not replace the engine control module (ECM) and WCM at the same time. When replacing several ECUs, always replace one ECU at a time, register the necessary IDs in it, and then replace the next ECU.

The transponder (a small transmitter) in the ignition key, WCM, and the ECM have their own ID codes stored in them. When the cases listed in the table below occur, the ID codes must be registered in the WCM or ECM again.

NOTE: Up to eight ignition keys (key ID and keyless entry secret code) can be stored in the memory of WCM.

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Item	Operation contents and procedure	Reference page for registration contents
When the ECM is replaced	Registration of Key codes	Key code registration (Refer to GROUP 00 –Precautions before Service –How to Perform VIN Writing P.00-26).
When WCM is replaced	1. VIN programmed 2. Register all the ignition keys again. 3. Register the keyless ID for all the ignition keys again (keys with transmitters only). 4. Register the TPMS transmitters	• Write the VIN (Refer to GROUP 00 –Precautions before Service –How to Perform VIN Writing P.00-26). • Key Registration, Keyless ID Registration and TPMS transmitter ID registration (Refer to P.42C-98).
When the ignition key is added as a single unit	1. Register all the ignition keys again. 2. Register the keyless ID for all the ignition keys again (keys with transmitters only).	Key Registration and Keyless ID Registration (Refer to P.42C-98).
When the ignition key is lost as a single unit	1. Register all the ignition keys other than the lost one again. 2. Register the keyless ID for all ignition key other than the lost ignition key again	
When the ignition key is replaced or added by the immobilizer key assembly is replaced by the piece.	Register all ignition keys again input barcode No.	Key Registration (Barcode No.) (Refer to P.42C-98).
When the ignition key is replaced or added by the immobi and keyless key assembly is replaced by the piece.	1. Register all ignition keys again input barcode No. 2. Register the keyless ID for all the ignition keys again (set supply only).	Key Registration (Barcode No.) and Keyless ID Registration (Refer to P.42C-98)
When the ignition key is replaced by the full service key set or the handle lock service key set is replaced by the piece.	1. Register all ignition keys again input barcode No. 2. Register the keyless ID for all the ignition keys again (set supply only).	
When the blank key* is replaced by the door service key set or trunk lid service key set is added by the piece.	Operation is not needed	–
When TPMS transmitter is replaced	Register the TPMS transmitters	TPMS transmitter ID registration (Refer to P.42C-98).

*NOTE: *: Blank key (the key that can be used to lock/unlock the door or trunk lid only)*

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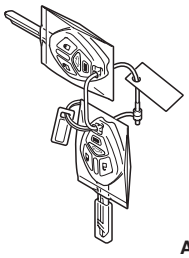
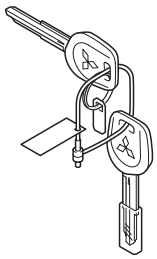
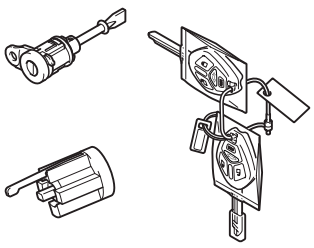
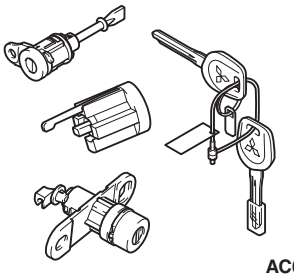
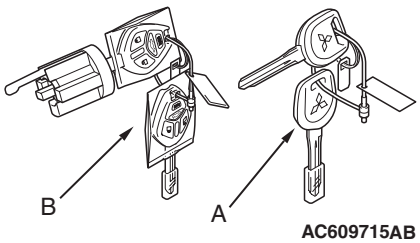
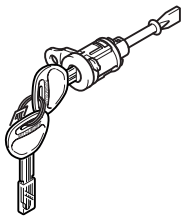
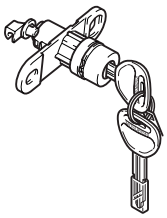
SUPPLY UNIT LIST FOR INDIVIDUAL KEY

Ignition key (without transmitter)	Ignition key (with transmitter)	*NOTE: Blank key (It is the key that comes with the door service key set and the trunk lid service key set. It can only be used for locking and unlocking, and it cannot start the engine.)*
AC502117	AC609713	BLANK KEY AC607881AB

Immobi and keyless key assembly	Immobilizer key assembly
 AC611353	 AC611354

KEY SUPPLY UNIT LIST FOR OTHER THAN INDIVIDUAL KEY

Full service key set <Vehicles with keyless entry system>	Full service key set <Vehicles without keyless entry system>	Handle lock service key set (A:Without transmitter, B:With transmitter)
 AC609714	 AC610065	 AC609715AB

Door service key set (LH), Door service key set (RH) <Vehicles without keyless entry system>	Trunk lid service key set <Vehicles without keyless entry system>
 AC610062	 AC610063

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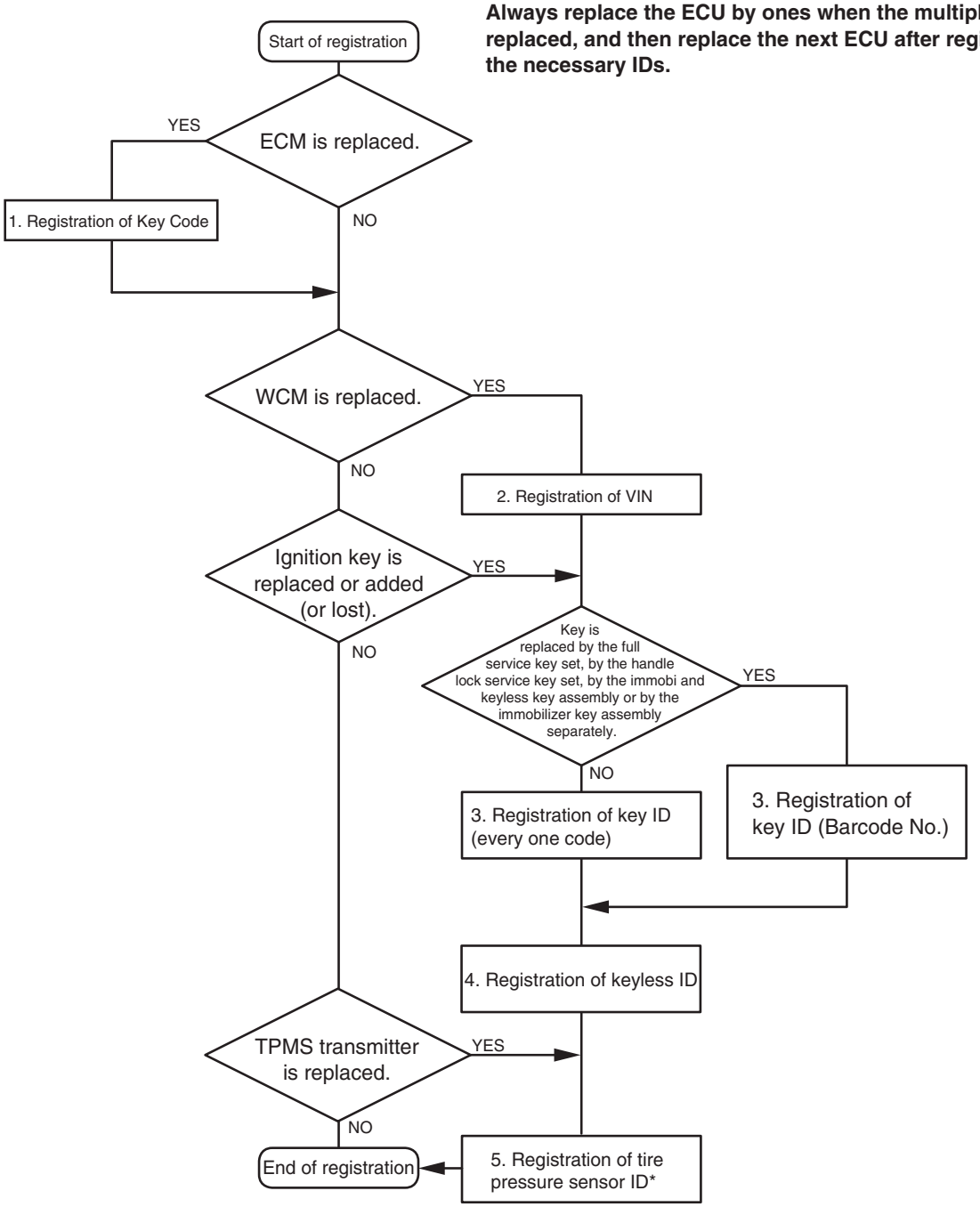
Registration flow chart

Caution:
Do not replace the ECM and the WCM simultaneously. Always replace the ECU by ones when the multiple ECU is replaced, and then replace the next ECU after registering the necessary IDs.


Start of registration
ECM is replaced.
YES
NO
1. Registration of Key Code
WCM is replaced.
YES
NO
2. Registration of VIN
Ignition key is replaced or added (or lost).
YES
NO
Key is replaced by the full service key set, by the handle lock service key set, by the immobi and keyless key assembly or by the immobilizer key assembly separately.
YES
NO
3. Registration of key ID (every one code)
3. Registration of key ID (Barcode No.)
4. Registration of keyless ID
TPMS transmitter is replaced.
YES
NO
5. Registration of tire pressure sensor ID*
End of registration

AC610079AB

NOTE
*: When WCM or TPMS transmitter is replaced.

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WARNINGS/ALARMS

M1427508800019

If the TPMS fails or the tire pressure is low, the WCM warns the driver of that state by the TPMS warning light and the multi information display in the combination meter.

Display contents	Item	State	Warning operations		Warning cancellation conditions (Cancels warning operations when one of the conditions met)
			TPMS warning light	Multi information display	
	TPMS warning light bulb open circuit check	The ignition switch is turned from "LOCK" (OFF) to "ON."	Illuminates for 3 seconds.	–	3 seconds have passed after the TPMS warning light is lit.
a AC610119AB	Tire pressure alarm	The received tire pressure value is under the ararm ON threshold value.	Illuminates.	Symbol and "LOW TIRE PRESSURE" is displayed.	The received tire pressure value is over the alarm OFF threshold value.

Display contents	Item		State	Warning operations		Warning cancellation conditions (Cancels warning operations when one of the conditions met)
				TPMS warning light	Multi information display	
b AC610120AB	TPMS failure warning	ID not stored	The TPMS transmitter ID is not registered in the WCM.	Flashes *	Symbol and "SERVICE REQUIRED" is displayed.	ID is registered normally.
		Defective EEPROM	Abnormality of data in the EEPROM of the WCM is detected.			Data in the EEPROM of the WCM is checked to be normal.
		Problem in signal reception	The signals from TPMS transmitters cannot be received while driving for about 20 minutes.			The signal from the TPMS transmitter that was warned is received.
		Defective sensor	The sensor failure signal is received from the TPMS transmitter.			A normal signal is received from the TPMS transmitter that was warned.
		The battery voltage of the TPMS transmitter is low.	The reception problem warning is activated because of the low battery voltage of the TPMS transmitter.			The signal of normal battery voltage is received from the TPMS transmitter that was warned.
		Vehicle speed input problem	The vehicle speed is not input.			The vehicle speed is input.
		Abnormal vehicle speed value	The vehicle speed value is abnormal.			The normal vehicle speed value is received.

*NOTE: *: Change to continuous illumination after flashing for about 1 minuite.*

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DIAGNOSTIC TROUBLE CODE CHART

M1427500200046

⚠ CAUTION

During diagnosis, a DTC associated with other system may be set when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for DTC(s). If DTC(s) are set, erase them all.

Diagnostic trouble code number	Diagnostic item	Reference page
B1731	Engine control module communication timeout	P.42C-16
B1761	VIN code not programmed	P.42C-18
B1A08	Keyless/KOS key1 performance	P.42C-19
B1A09	Keyless/KOS key2 performance	
B1A0A	Keyless/KOS key3 performance	
B1A0B	Keyless/KOS key4 performance	
B1A0C	Keyless key 5 performance	
B1A0D	Keyless key 6 performance	
B1A0E	Keyless key 7 performance	
B1A0F	Keyless key 8 performance	
B1A10	Keyless/KOS key 1 low battery	P.42C-21
B1A11	Keyless/KOS key 2 low battery	
B1A12	Keyless/KOS key 3 low battery	
B1A13	Keyless/KOS key 4 low battery	
B1A14	Keyless key 5 low battery	
B1A15	Keyless key 6 low battery	
B1A16	Keyless key 7 low battery	
B1A17	Keyless key 8 low battery	
B1A24	Key ID not registered	P.42C-22
B1A25	Key ID unmatched	P.42C-24
B1A28	Engine control module authenticate error	P.42C-26
B1A35	Transponder read error	P.42C-28
B2101	IG SW start POS.circuit low	P.42C-31
B2102	IG SW start POS.circuit high	
B2204	Coding data mismatch	P.42C-34
B2206	VIN code mismatch	P.42C-35
B2352	Antenna fail	P.42C-36
B2401	Keyless/KOS key ID not register	P.42C-22
B2416	ECU internal error	P.42C-39
C1608	EEPROM error	P.42C-40
C1900	No registration	P.42B-85
C1901	Vehicle speed information abnormality	P.42B-87

TSB Revision

Diagnostic trouble code number	Diagnostic item	Reference page
C1910	Transmitter low battery voltage abnormality 1	P.42C-44
C1920	Transmitter low battery voltage abnormality 2	
C1930	Transmitter low battery voltage abnormality 3	
C1940	Transmitter low battery voltage abnormality 4	
C1911	Reception abnormality 1	
C1921	Reception abnormality 2	
C1931	Reception abnormality 3	
C1941	Reception abnormality 4	
C1912	Tire inflation pressure warning 1	P.42B-91
C1922	Tire inflation pressure warning 2	
C1932	Tire inflation pressure warning 3	
C1942	Tire inflation pressure warning 4	
C1913	Acceleration sensor abnormality 1	P.42C-44
C1923	Acceleration sensor abnormality 2	
C1933	Acceleration sensor abnormality 3	
C1943	Acceleration sensor abnormality 4	
C1914	Pressure sensor abnormality 1	
C1924	Pressure sensor abnormality 2	
C1934	Pressure sensor abnormality 3	
C1944	Pressure sensor abnormality 4	
C1915	Transmitter OFF mode 1	P.42B-93
C1925	Transmitter OFF mode 2	
C1935	Transmitter OFF mode 3	
C1945	Transmitter OFF mode 4	
U0019	Bus off (CAN-B)	P.42C-51
U0141	ETACS-ECU CAN timeout	P.42C-52
U0151	SRS-ECU CAN timeout	P.42C-54
U0154	Occupant classification-ECU CAN timeout	P.42C-55
U0155	Combination meter CAN timeout	P.42C-57
U0164	A/C-ECU CAN timeout	P.42C-59
U0184	Audio CAN timeout	P.42C-60
U0195	Satellite radio tuner CAN timeout	P.42C-62
U0197	Hands free module CAN timeout	P.42C-63
U0245	Audio visual navigation unit CAN timeout	P.42C-65
U1412	Implausible vehicle speed signal received	P.42B-111
U1415	Coding not completed/Data fail	P.42C-69
U1417	Implausible coding data	P.42C-70

TSB Revision

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B1731: Engine control module communication timeout

⚠ CAUTION
- **When DTC B1731 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DTC SET CONDITION

WCM checks that the engine control module data has been received via the CAN bus lines, and if not, sets DTC No. B1731.

TECHNICAL DESCRIPTION (COMMENT)

If no data [ETACS transmits engine random number data to WCM via the CAN bus lines] is received from the engine control module via the CAN bus lines when the ignition switch is turned to ON position, it is judged as abnormal.

TROUBLESHOOTING HINTS

- Malfunction of CAN bus line
- Malfunction of WCM
- Malfunction of engine control module

DIAGNOSIS

Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

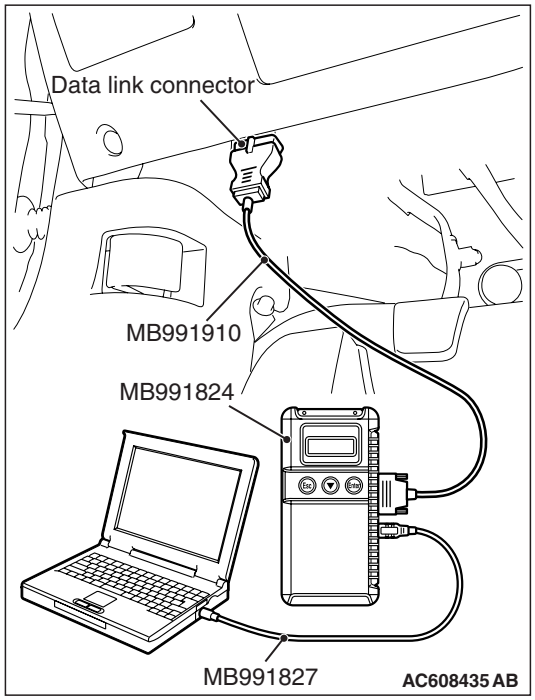
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).



STEP 2. Using scan tool MB991958, check for engine control module diagnostic trouble code.

Check again if the DTC is set to the engine control module.

Q: Is the DTC set?

YES : Troubleshoot the MFI system (Refer to GROUP 13A, Diagnostic trouble code chart P.13A-46).

NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.

(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8). After registering the ID codes, go to Step 4.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.

(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the engine control module and record the VIN (Refer to GROUP 00 - How To Perform Vehicle Identification Number (VIN) Writing P.00-26).

NO : The procedure is complete.

DTC B1761: VIN code not programmed

⚠ CAUTION
- **When DTC B1761 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

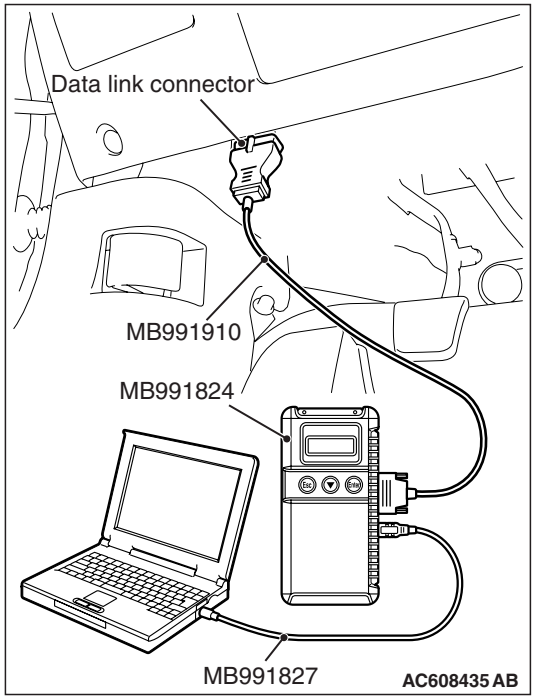
DTC SET CONDITION
WCM sets DTC B1761 when no VIN is recorded in it.

TECHNICAL DESCRIPTION (COMMENT)
WCM determines that the abnormality is present when no VIN is recorded in it.

TROUBLESHOOTING HINTS
- VIN not programmed
- Malfunction of the WCM

DIAGNOSIS

Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Register the VIN and recheck the diagnostic trouble code.
Register VIN in WCM [Refer to GROUP 00 –How to Perform Vehicle Identification Number (VIN) Writing P.00-26] and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?
YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The procedure is complete.

DTC B1A08: Keyless/KOS key1 performance
DTC B1A09: Keyless/KOS key2 performance
DTC B1A0A: Keyless/KOS key3 performance
DTC B1A0B: Keyless/KOS key4 performance
DTC B1A0C: Keyless key 5 performance
DTC B1A0D: Keyless key 6 performance
DTC B1A0E: Keyless key 7 performance
DTC B1A0F: Keyless key 8 performance

⚠ CAUTION
When replacing the ECU, always check that the communication circuit is normal.

DTC SET CONDITION

The door locking/unlocking code is automatically updated every time the doors are locked (rolling code). WCM stores DTC B1A08, B1A09, B1A0A, B1A0B, B1A0C, B1A0D, B1A0E, or B1A0F when it receives wrong signal (rolling code out of synchronisation) from the transmitter.

TECHNICAL DESCRIPTION (COMMENT)

- B1A08: WCM determines that the abnormality is present when the rolling code received from the transmitter 1 (the first transmitter registered in WCM) greatly differs from the rolling code stored in WCM.
- B1A09: WCM determines that the abnormality is present when the rolling code received from the transmitter 2 (the second transmitter registered in WCM) greatly differs from the rolling code stored in WCM.
- B1A0A: WCM determines that the abnormality is present when the rolling code received from the transmitter 3 (the third transmitter registered in WCM) greatly differs from the rolling code stored in WCM.
- B1A0B: WCM determines that the abnormality is present when the rolling code received from the transmitter 4 (the fourth transmitter registered in WCM) greatly differs from the rolling code stored in WCM.
- B1A0C: WCM determines that the abnormality is present when the rolling code received from the transmitter 5 (the fifth transmitter registered in WCM) greatly differs from the rolling code stored in WCM.
- B1A0D: WCM determines that the abnormality is present when the rolling code received from the transmitter 6 (the sixth transmitter registered in WCM) greatly differs from the rolling code stored in WCM.
- B1A0E: WCM determines that the abnormality is present when the rolling code received from the transmitter 7 (the seventh transmitter registered in WCM) greatly differs from the rolling code stored in WCM.

- B1A0F: WCM determines that the abnormality is present when the rolling code received from the transmitter 8 (the eighth transmitter registered in WCM) greatly differs from the rolling code stored in WCM.

TROUBLESHOOTING HINTS

- Rolling code out of synchronisation
- Malfunction of the transmitter
- Malfunction of the WCM

DIAGNOSIS

STEP 1. Synchronise the rolling code and recheck the diagnostic trouble code.

(1) Synchronise the rolling code. Use either way to synchronise the rolling code:
- Push the transmitter switches twice or more.
- Resister the keyless ID (Refer to P.42C-98).

*NOTE: *: Name of the signals to be registered.*

(2) Recheck if the DTC is set.
a. Erase the DTC.
b. Push the lock switch or unlock switch of transmitter.
c. Check if the DTC is set.

Q: Is the DTC set?

YES : Go to Step 2.

NO : The diagnosis is complete.

STEP 2. Check whether the diagnostic trouble code is reset.

Replace the transmitter by which the DTC is set with a new one, register the key ID and the keyless ID (Refer to P.42C-98), and recheck if the DTC is set.

(1) Erase the DTC.
(2) Push the lock switch or unlock switch of transmitter.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The diagnosis is complete.

DTC B1A10: Keyless/KOS key 1 low battery
DTC B1A11: Keyless/KOS key 2 low battery
DTC B1A12: Keyless/KOS key 3 low battery
DTC B1A13: Keyless/KOS key 4 low battery
DTC B1A14: Keyless key 5 low battery
DTC B1A15: Keyless key 6 low battery
DTC B1A16: Keyless key 7 low battery
DTC B1A17: Keyless key 8 low battery

⚠ CAUTION
When replacing the ECU, always check that the communication circuit is normal.

DTC SET CONDITION

WCM sets DTC B1A10, B1A11, B1A12, B1A13, B1A14, B1A15, B1A16, or B1A17 when it receives low battery voltage signal from the transmitter.

TECHNICAL DESCRIPTION (COMMENT)

- B1A10: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 1 (the first transmitter registered in WCM) five consecutive times.
- B1A11: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 2 (the second transmitter registered in WCM) five consecutive times.
- B1A12: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 3 (the third transmitter registered in WCM) five consecutive times.
- B1A13: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 4 (the fourth transmitter registered in WCM) five consecutive times.
- B1A14: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 5 (the fifth transmitter registered in WCM) five consecutive times.
- B1A15: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 6 (the sixth transmitter registered in WCM) five consecutive times.
- B1A16: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 7 (the seventh transmitter registered in WCM) five consecutive times.
- B1A17: WCM determines that the abnormality is present when it receives low battery voltage signal from the transmitter 8 (the eighth transmitter registered in WCM) five consecutive times.

TROUBLESHOOTING HINTS

- Battery failure in the transmitter
- Malfunction of the transmitter
- Malfunction of WCM

DIAGNOSIS

STEP 1. Replace the battery in the transmitter and recheck the diagnostic trouble code.

Replace the battery in the transmitter by which the DTC is set with a new one, and recheck if the DTC is set (Refer to P.42C-113).

(1) Replace the battery in the transmitter by which the DTC is set.
(2) Use the transmitter to lock/unlock the doors.
(3) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 2.
NO : The diagnosis is complete (Discharged battery).

STEP 2. Replace the transmitter and recheck the diagnostic trouble code.

Replace the transmitter by which the DTC is set with a new one, register the key ID and the keyless entry secret code (Refer to P.42C-98), and recheck if the DTC is set.

(1) Use the transmitter to lock/unlock the doors.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The diagnosis is complete.

DTC B1A24: Key ID not registered

DTC SET CONDITION

WCM sets DTC B1A24 when the key ID was not registered in it.

TECHNICAL DESCRIPTION (COMMENT)

WCM determines that the abnormality is present, if the ignition key's key ID is not registered in WCM when the ignition switch is turned ON.

TROUBLESHOOTING HINTS

- Key ID not registered
- Malfunction of the ignition key
- Malfunction of WCM

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

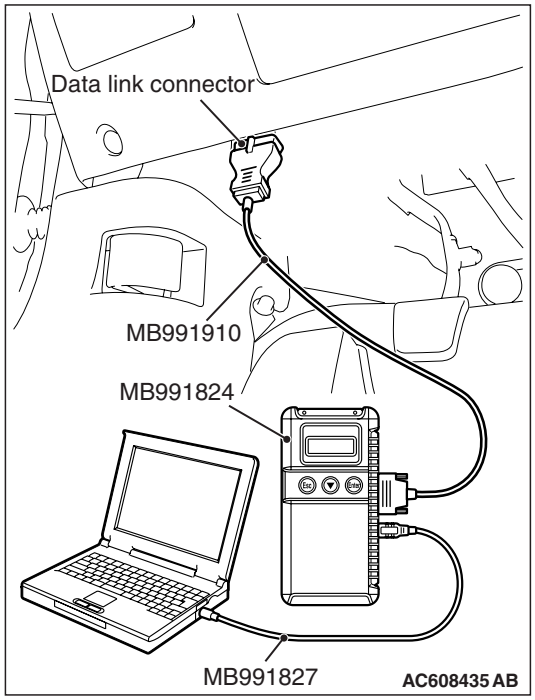
⚠ CAUTION

To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).



STEP 2. Register the key ID and recheck the diagnostic trouble code.
Register the key ID of the ignition key (refer to P.42C-8), and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 3.
NO : The procedure is complete.

STEP 3. Replace the ignition key and recheck the diagnostic trouble code.
Replace the ignition key with the other key, and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 4.
NO : The procedure is complete.

STEP 4. Register the key ID and recheck the diagnostic trouble code.
Register the key ID of the ignition key (refer to P.42C-8), and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 5.
NO : The procedure is complete.

STEP 5. Replace the ignition key and recheck the diagnostic trouble code.
Replace the ignition key with a new one, register the key ID and keyless ID (if so equiped) of the new key, (refer to P.42C-8), and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The procedure is complete.

DTC B1A25: Key ID unmatched

DTC SET CONDITION

WCM sets DTC B1A25 when the received key ID is different from the one registered in it.

TECHNICAL DESCRIPTION (COMMENT)

WCM determines that the abnormality is present, if the key ID for the ignition key does not match the one registered in WCM when the ignition switch is turned ON.

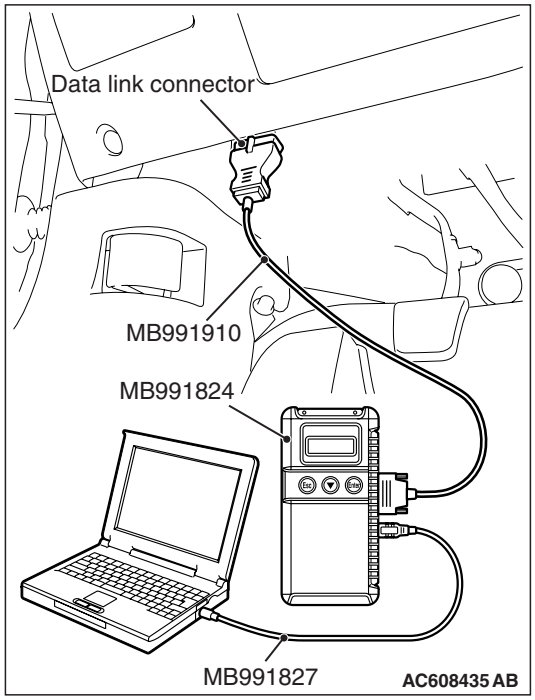
TROUBLESHOOTING HINTS

- Malfunction of the ignition key
- Malfunction of WCM
- Key not registered
- WCM not registered
- Key is registered to another vehicle

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Register the key ID and recheck the diagnostic trouble code.
Register the key ID of the ignition key (refer to P.42C-8), and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 3.
NO : The procedure is complete.

STEP 3. Replace the ignition key and recheck the diagnostic trouble code.
Replace the ignition key by which the DTC is set with the other key, and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 4.
NO : The procedure is complete.

STEP 4. Register the key ID and recheck the diagnostic trouble code.
Register the key ID of the ignition key (refer to P.42C-8), and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Go to Step 5.
NO : The procedure is complete.

STEP 5. Replace the ignition key and recheck the diagnostic trouble code.
Replace the ignition key with a new one, register the key ID and keyless ID (if so equiped) of the new key, (refer to P.42C-8), and recheck if the DTC is set.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?
YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The procedure is complete.

DTC B1A28: Engine control module authenticate error

⚠ CAUTION
- **When DTC B1A28 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DTC SET CONDITION
WCM sets DTC B1A28 when the ignition key certification result and the engine control module starting condition do not match.

TECHNICAL DESCRIPTION (COMMENT)
WCM determines that the abnormality is present, if the key certification result and the engine control module starting condition do not match after the engine start permission communication is completed.

TROUBLESHOOTING HINTS
- Malfunction of WCM
- Malfunction of engine control module
- VIN registered in engine control module unmatched

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

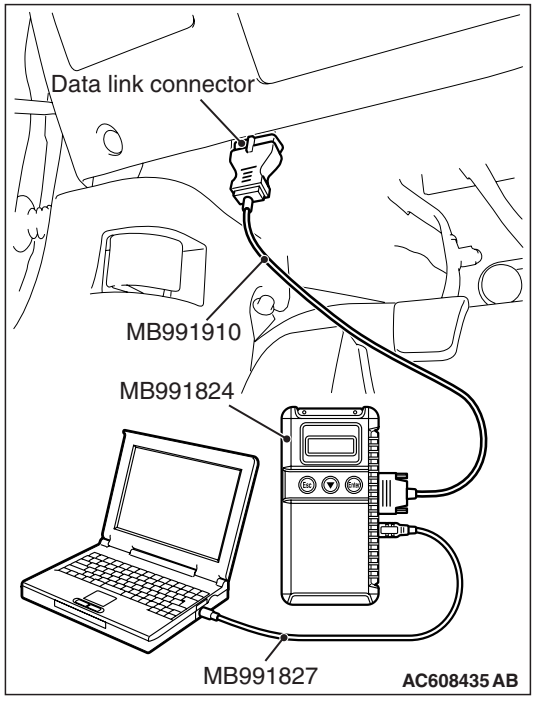
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).



STEP 2. Using scan tool MB991958, read the engine control module diagnostic trouble code.
Check again if the DTC is set to the engine control module.

Q: Is the DTC set?

YES : Troubleshoot the MFI system (Refer to GROUP 13A, Diagnostic trouble code chart P.13A-46).
NO : Go to Step 3.

STEP 3. Check if VIN registered in the engine control module matches with the vehicle's VIN.
Check if VIN registered in the engine control module matches with the vehicle's VIN.

Q: Does the VIN registered in the engine control module match the vehicle's VIN?

YES : Go to Step 4.
NO : Record the engine control module of VIN (Refer to GROUP 00 –How to Perform Vehicle Identification Number (VIN) Writing P.00-26). Record VIN and go to Step 5.

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8). Then go to Step 6.
NO : Intermittent malfunction is suspected (Refer to GROUP 00 –How to Use Troubleshooting/Inspection Service Points –How to Deal with Intermittent Malfunction P.00-13).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8). Then go to Step 6.
NO : The procedure is complete.

STEP 6. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the engine control module and record VIN (Refer to GROUP 00 –How to Perform Vehicle Identification Number (VIN) Writing P.00-26).
NO : The procedure is complete.

DTC B1A35: Transponder read error

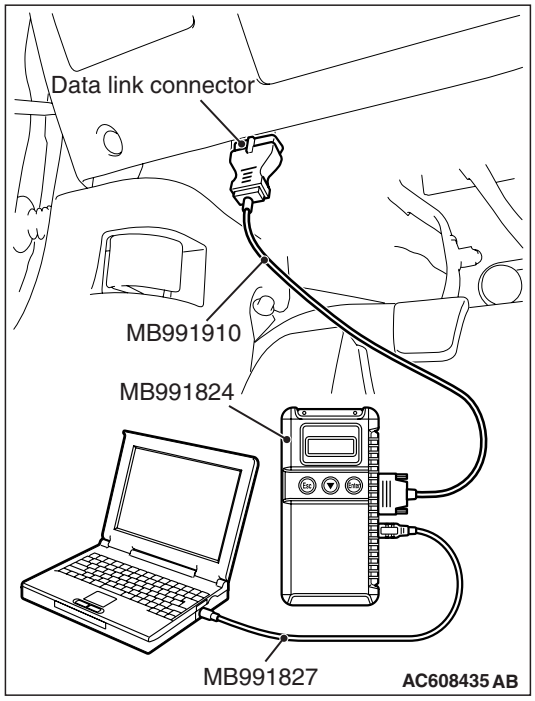
⚠ CAUTION
- **When DTC B1A35 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DTC SET CONDITION
WCM sets DTC B1A35 when it cannot receive data from the transponder.

TECHNICAL DESCRIPTION (COMMENT)
WCM determines that the abnormality is present, if it cannot receive the key ID for the ignition key when the ignition switch is turned ON.

TROUBLESHOOTING HINTS
- Malfunction of the ignition key
- Malfunction of WCM
- Interference of the key ID

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Check the ignition key inserted in the key cylinder for interference.

Q: Are there other ignition keys or anything that interferes with the communication (things that generate radio waves such as magnets or air-cleaning device that has a power plug) near the ignition key inserted in the key cylinder?

YES : Move away or remove other ignition keys or anything that interferes with the communication, and go to Step 3.
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Go to Step 4.
NO : The procedure is complete.

STEP 4. Replace the ignition key and recheck the diagnostic trouble code.

Replace the ignition key by which the DTC is set with the other key, and recheck if the DTC is set.

(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.

(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Go to Step 5.

NO : The procedure is complete.

STEP 5. Register the key ID and recheck the diagnostic trouble code.

Register the key ID of the ignition key (refer to P.42C-8), and recheck if the DTC is set.

(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.

(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Go to Step 6.

NO : The procedure is complete.

STEP 6. Replace the ignition key and recheck the diagnostic trouble code.

Replace the ignition key by which the DTC is set with a new one, register the key ID of the new key, (refer to P.42C-8), and recheck if the DTC is set.

(1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.

(2) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

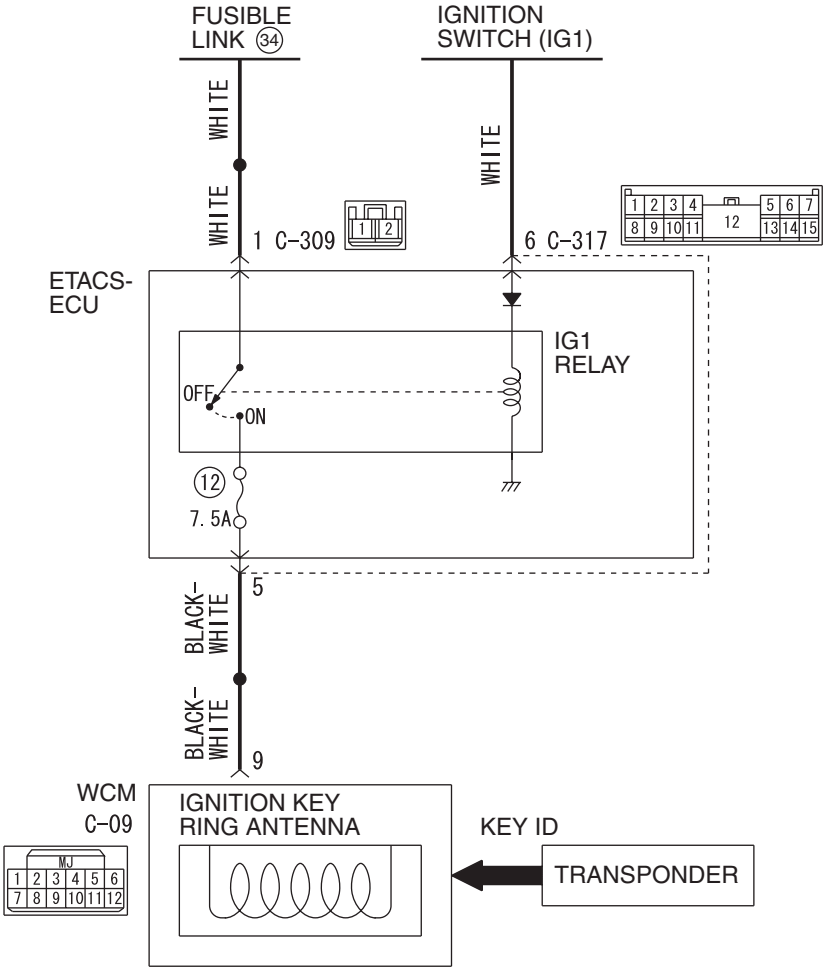
NO : The procedure is complete.

DTC B2101: IG SW start POS.circuit low
DTC B2102: IG SW start POS.circuit high

⚠ CAUTION

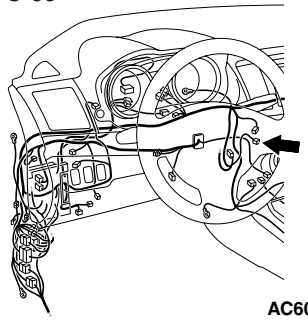
- **If DTC B2101 or B2102 is set, be sure to diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

WCM Communication Circuit



W8G54M054A

Connector: C-09



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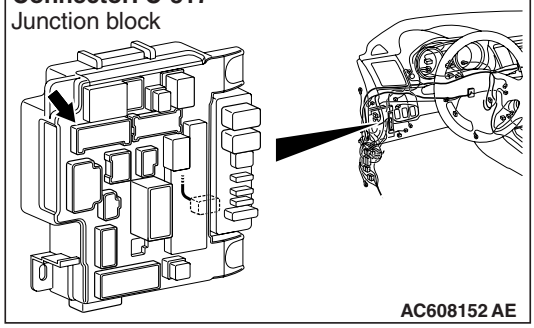
Connector: C-317
Junction block



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DTC SET CONDITION

WCM sets DTC B2101 or B2102 when the actual state of the ignition switch and the ignition switch position information received from ETACS-ECU via CAN do not match.

TECHNICAL DESCRIPTION (COMMENT)

WCM determines that the abnormality is present, if it has detected discrepancy in the ignition switch level shown below ten consecutive times when WCM has received the CAN message (ignition switch position information) from ETACS-ECU with the ignition switch turned to the ON or START position.

B2101

- Status of ignition switch: OFF position
- Ignition switch position information from the ETACS-ECU: ON

B2102

- Status of ignition switch: ON position
- Ignition switch position information from the ETACS-ECU: OFF

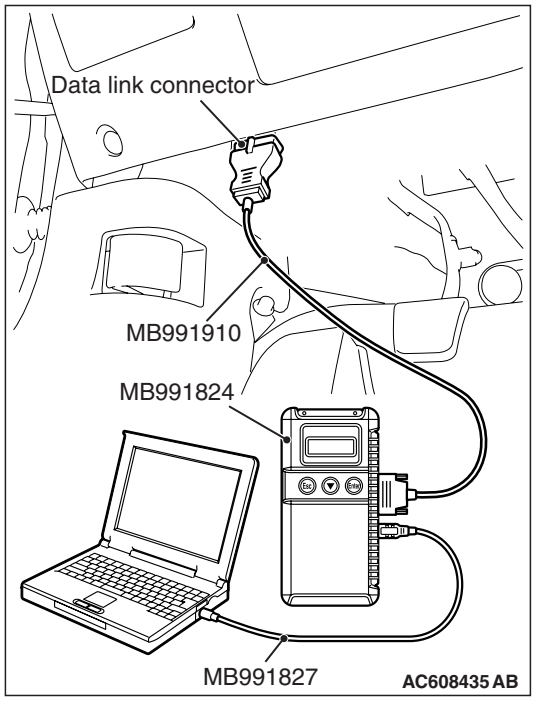
TROUBLESHOOTING HINTS

- Malfunction of CAN bus line
- Malfunction of the WCM
- Malfunction of the ignition switch
- Damaged wiring harness and connectors
- Malfunction of ETACS-ECU

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Check ETACS-ECU connector C-317 and WCM connector C-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-317 and WCM connector C-09 in good condition?

YES : Go to Step 3.
NO : Repair the defective connector.

STEP 3. Check the wiring harness between WCM connector C-09 (terminal No.9) and ETACS-ECU connector C-317 (terminal No.5).

- Check the power supply line for open circuit.

Q: Is the wiring harness between WCM connector C-09 (terminal No. 9) and ETACS-ECU connector C-317 (terminal No. 5) in good condition?

YES : Go to Step 4.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the ignition voltage.

Item No.	Item name	Normal condition
Item 254	IG voltage	Battery voltage

Q: Does scan tool MB991958 display the item "IG voltage" as normal condition?

YES : Go to Step 5.
NO : Diagnose the ETACS-ECU (Refer to GROUP 54A – ETACS, Diagnosis P.54A-482).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

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DTC B2204: Coding data mismatch

DTC SET CONDITION

WCM sets DTC B2204 when the vehicle information data on the CAN line does not match the vehicle information data registered in WCM.

TECHNICAL DESCRIPTION (COMMENT)

WCM determines that the abnormality is present when the vehicle information registered in it does not match the vehicle information data.

TROUBLESHOOTING HINTS

- Malfunction of WCM
- Malfunction of ETACS-ECU

DIAGNOSIS

Required Special Tools:

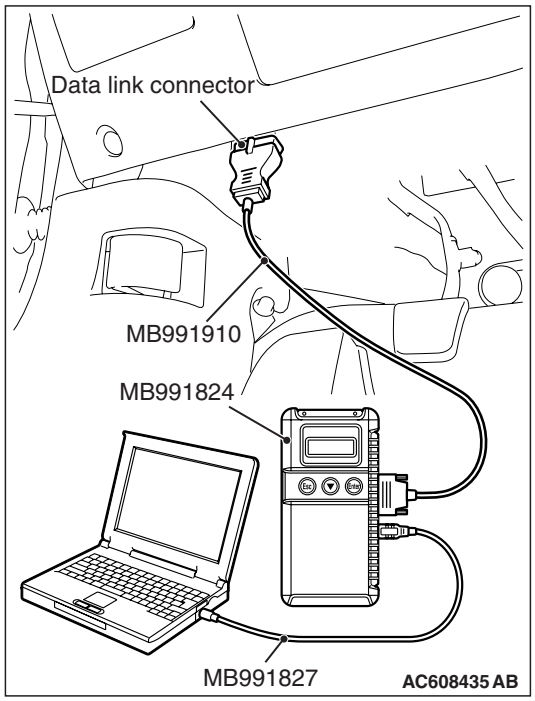
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.



Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code

Check again if the DTC is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS (Refer to GROUP 54A, Diagnosis P.54A-482).
NO : Go to Step 3.

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STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

DTC B2206: VIN code mismatch

DTC SET CONDITION

WCM sets DTC B2206 when VIN registered in it and VIN that has been transmitted on the CAN bus do not match.

TECHNICAL DESCRIPTION (COMMENT)

WCM determines that the abnormality is present when VIN registered in it and the one that has been transmitted on the CAN bus do not match.

TROUBLESHOOTING HINTS

- Malfunction of WCM
- VIN registered in ECM unmatched
- WCM being registered to another vehicle

DIAGNOSIS

Required Special Tools:

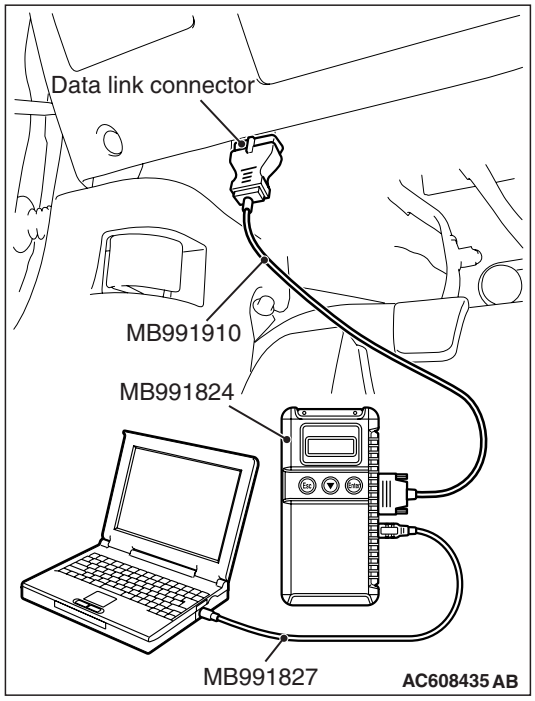
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the VIN registered in ECM
Check if VIN registered in the ECM matches with the vehicle's VIN.

Q: Do VIN registered in the ECM and the vehicle's VIN match?

YES : Go to Step 2.

NO : Replace the ECM and record VIN (Refer to GROUP 00 –How to Perform Vehicle Identification Number (VIN) Writing P.00-26). Record VIN and go to Step 2 .



STEP 2. Check whether the diagnosis code is reset.
Recheck if the diagnosis code is set.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Erase the DTC.
(3) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(4) Check if the diagnosis code is set.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The diagnosis is complete.

DTC B2352: Antenna fail

DTC SET CONDITION

WCM sets DTC B2352 when open or short circuit to the ground in the antenna is detected.

TECHNICAL DESCRIPTION (COMMENT)

When the ignition switch is turned ON, WCM transmits signal to the antenna. When the antenna is found faulty, WCM determines that the abnormality is present.

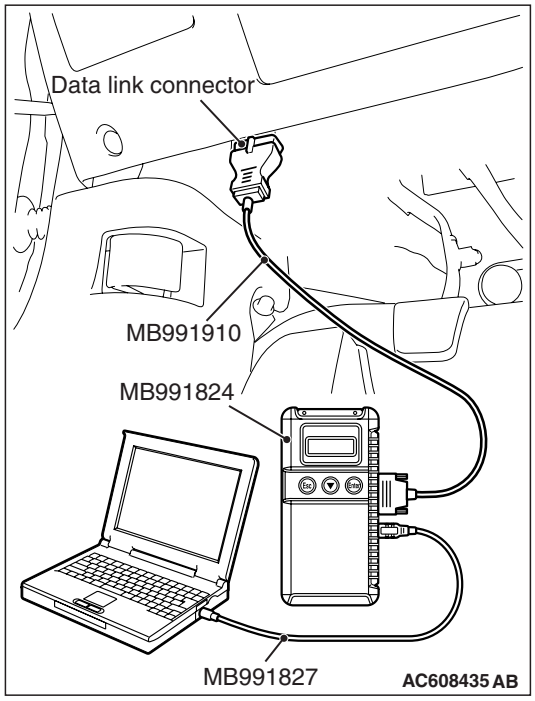
TROUBLESHOOTING HINT

Malfunction of WCM (Open circuit in antenna)

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.

⚠ CAUTION
To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector. Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The procedure is complete.

DTC B2401: Keyless/KOS key ID not register

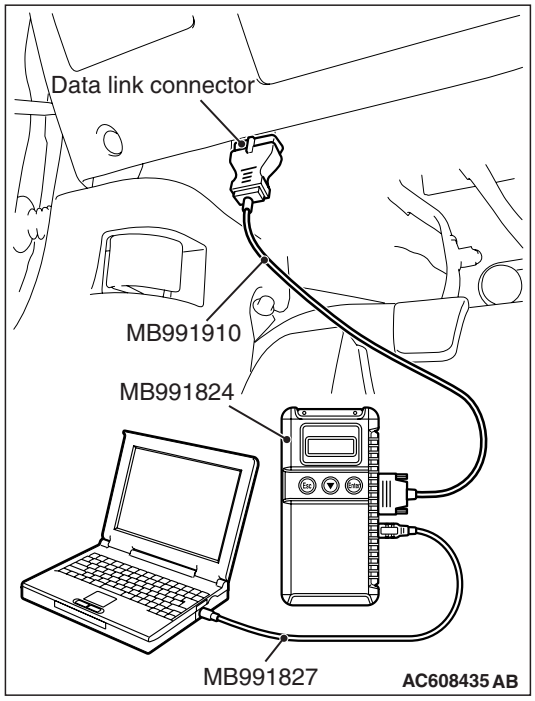
⚠ CAUTION
- **If DTC B2401 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DTC SET CONDITION
WCM sets DTC B2401 when no transmitter is registered in it.

TECHNICAL DESCRIPTION (COMMENT)
WCM determines that the abnormality is present when the number of the transmitters registered in it is 0.

TROUBLESHOOTING HINTS
- Failure of transmitter registration process
- Malfunction of WCM

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Register the transmitter and recheck the diagnostic trouble code.

Register the keyless entry secret code (Refer to P.42C-8), and recheck if the DTC is set.
(1) Erase the DTC.
(2) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The procedure is complete.

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DTC B2416: ECU internal error

DTC SET CONDITION

WCM sets DTC B2416 when it determines an abnormal status within itself.

TECHNICAL DESCRIPTION (COMMENT)

WCM determines that the abnormality is present, if the data abnormality is found when the ignition switch is turned ON and then EEPROM is written.

TROUBLESHOOTING HINTS

Malfunction of WCM

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.

⚠ CAUTION

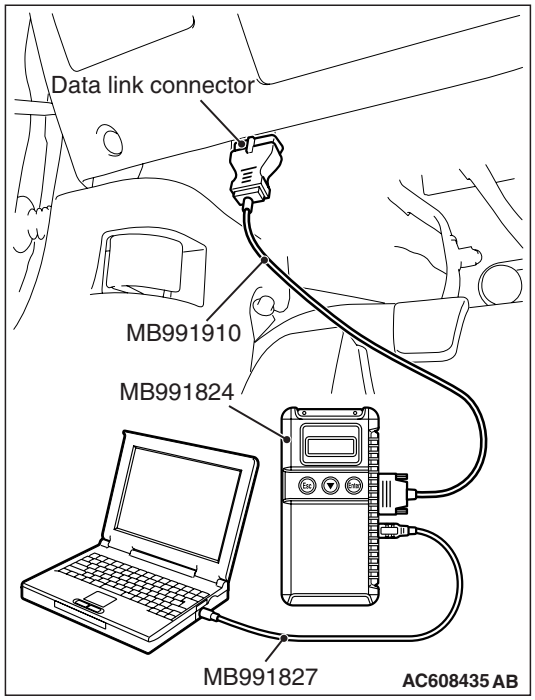
To prevent damage to scan tool (MB991958), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (MB991958).

(1) Connect scan tool MB991958 to the data link connector.
(2) Erase the DTC.
(3) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(4) Check if DTC is set.
(5) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).



DTC C1608: EEPROM Error

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

WCM incorporates EEPROM (nonvolatile memory), and that EEPROM stores the TPMS, WCM and immobilizer information. When the data in EEPROM is failed, this code is set.

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:
- Damaged wiring harness and connector
- Malfunction of WCM

DIAGNOSIS

Required Special Tools:
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics
Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-9). On completion, go to Step 2.

STEP 2. Diagnostic trouble code check
(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1608 set?

YES : Replace the WCM and register the ID codes (Refer to P.42C-98). Then go to Step 3.
NO : The procedure is complete.

STEP 3. Diagnostic trouble code check
(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1608 set?

YES : Start over at Step 1.
NO : The procedure is complete.

TSB Revision

DTC C1900: No Registration

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

When the ID registration information of the TPMS transmitter is not stored in the WCM, and/or when the WCM is replaced with a new one, this code is set. If the ID registration mode is terminated forcibly or time-out after one or more TPMS transmitters are registered in the ID registration mode, the ID information in the WCM is erased, and this diagnostic trouble code is set.

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:
- Damaged wiring harness and connector
- Malfunction of TPMS transmitter
- Malfunction of WCM
- ID code registration failed.

DIAGNOSIS

Required Special Tools:
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-189). On completion, go to Step 2.

STEP 2. Diagnostic trouble code check

(1) Turn the ignition switch to the "ON" position.
(2) TPMS transmitter ID registration (Refer to P.42C-98).
(3) Turn the ignition switch to the "LOCK" (OFF) position.
(4) Turn the ignition switch to the "ON" position.
(5) Check if the DTC is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1900 set?

YES : Register the ID codes (Refer to P.42C-98). Then go to Step 3.

NO : The procedure is complete.

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set.
(1) Turn the ignition switch to the "ON" position.
(2) Erase the DTC.
(3) Turn the ignition switch to the "LOCK" (OFF) position.
(4) Turn the ignition switch to the "ON" position.
(5) Check if the DTC is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1900 reset?

YES : Replace the WCM and register the ID codes (Refer to P.42C-98). Then start over at Step 1.
NO : The procedure is complete.

DTC C1901: Vehicle Speed Information Abnormality

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

WCM receives the wheel speed information from ABS-ECU via the CAN-bus line. Although WCM receives the information that the wheel is not currently rotated from ABS-ECU, if the TPMS transmitter sends the information that the wheel is rotated, this code is set.

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:
- Damaged wiring harness and connector
- Malfunction of TPMS transmitter
- Malfunction of WCM
- Malfunction of ABS-ECU
- Malfunction of ETACS-ECU

DIAGNOSIS

Required Special Tools:
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics
Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-189). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines
(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1901 set?

YES : Go to Step 3.
NO : The procedure is complete.

STEP 3. Vehicle speed check by combination meter
During the vehicle driving, check that the correct vehicle speed is displayed on the combination meter.

Q: Is the check result normal?

YES : Go to Step 6.
NO : Go to Step 4.

STEP 4. Check for other diagnostic trouble code.
Check if the diagnostic trouble code is set from ABS-ECU <Refer to GROUP 35B, diagnostic trouble code chart P.35B-8 (vehicle with ABS)> or ECM <Refer to GROUP 13A, diagnostic trouble code chart P.13A-46 (vehicle without ABS)>.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Carry out the relevant troubleshooting.<Refer to GROUP 35B, diagnostic trouble code chart P.35B-8 (vehicle with ABS) or GROUP 13A, diagnostic trouble code chart P.13A-46 (vehicle without ABS)>. Then go to Step 5.

STEP 5. Check for other diagnostic trouble code.
Check if the diagnostic trouble code is set from ETACS-ECU (Refer to GROUP 54A, ETACS –diagnostic trouble code chart P.54A-482).

Q: Is the check result normal?

YES : Diagnose the combination meter. (Refer to GROUP 54A, Combination meter –diagnostic trouble code chart P.54A-23) Go to Step 7.
NO : Carry out the relevant troubleshooting.(Refer to GROUP 54A, ETACS –diagnostic trouble code chart P.54A-482). Then go to Step 7.

STEP 6. Check the TPMS transmitter acceleration.
Check the acceleration value of each TPMS transmitter by the TPMS transmitter check function (Refer to P.42C-109).

Q: Is the check result normal?

YES : Replace the WCM and register ID codes (Refer to P.42C-98). Then go to Step 7.

NO : Replace the TPMS transmitter and register ID codes (Refer to P.42C-98). Then go to Step 7.

STEP 7. Recheck for diagnostic trouble code.
(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1901 set?

YES : Start over at Step 1.

NO : The procedure is complete.

DTC C1910, C1920, C1930, C1940: Transmitter Low Battery Voltage Abnormality 1, 2, 3, 4
DTC C1911, C1921, C1931, C1941: Reception Abnormality 1, 2, 3, 4
DTC C1913, C1923, C1933, C1943: Acceleration Sensor Abnormality 1, 2, 3, 4
DTC C1914, C1924, C1934, C1944: Pressure Sensor Abnormality 1, 2, 3, 4

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

DTC C1910, C1920, C1930, C1940
- When the reception abnormality warning is activated because of the low battery voltage of the TPMS transmitter.

DTC C1911, C1921, C1931, C1941
- When WCM cannot receive the signals from the TPMS transmitters while driving for about 20 minuites, this code is set.

DTC C1913, C1923, C1933, C1943
- The TPMS transmitter detects if the wheel is rotated by the acceleration sensor and sends the signals to WCM. When the TPMS transmitter judges that the acceleration sensor is failed, the failure signal is send to WCM, and WCM sets this code.

DTC C1914, C1924, C1934, C1944
- The TPMS transmitter detects if the tire pressure sensor is normal and sends the signal to WCM. When the TPMS transmitter judges that the tire pressure sensor is failed, the failure signal is send to WCM, and WCM sets this code.

TSB Revision

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:

- Low battery that is incorporated in the TPMS transmitter
- Damaged wiring harness and connector
- Registered IDs unmatched
- Malfunction of TPMS transmitter
- Malfunction of WCM

DIAGNOSIS

Required Special Tools:

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-189). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

Q: Is the DTC C1910, C1920, C1930, C1940, C1911, C1921, C1931, C1941, C1913, C1923, C1933, C1943, C1914, C1924, C1934 or C1944 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check for TPMS transmitter.

Refer to P.42C-109.

NOTE: The TPMS transmitter which cannot be checked may be faulty or the ID code may not be registered, thus do not replace it, but register the ID code. If the transmitter is faulty, it is replaced in the ID code registration process.

Q: Is the check result normal?

YES : Among the checked TPMS transmitters, replace the TPMS transmitters to which the DTC is set, and then register the ID codes. (Refer to P.42C-98.)

NO : Even when no transmitter is checked, register the ID codes. (Refer to P.42C-98.) Then go to Step 4.

STEP 4. Diagnostic trouble code recheck after register the ID codes

(1) Turn the ignition switch to the "ON" position.
(2) Check if the DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1910, C1920, C1930, C1940, C1911, C1921, C1931, C1941, C1913, C1923, C1933, C1943, C1914, C1924, C1934 or C1944 set?

YES : Replace the WCM and register the ID codes (Refer to P.42C-98). Then start over at Step 1.

NO : The procedure is complete.

DTC C1912: Tire Inflation pressure Warning 1
DTC C1922: Tire Inflation pressure Warning 2
DTC C1932: Tire Inflation pressure Warning 3
DTC C1942: Tire Inflation pressure Warning 4

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

When the tire pressure included in the signal from the TPMS transmitter is less than the specified value, WCM sets this code.

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:

- Drop of tire pressure
- Loose TPMS transmitter mounting nut
- Flat tire
- TPMS transmitter malfunction
- WCM malfunction
- CAN-bus line malfunction

DIAGNOSIS

Required Special Tools:

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-189). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

Q: Is DTC C1912, C1922, C1932 or C1942 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Tire check

Check that there is no abnormality for the items below.

- Flat tire
- Cracked tire
- Air leak from valve
- Loose TPMS transmitter mounting nut (Refer to P.42C-115).

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace it. Then go to Step 4.

STEP 4. Diagnostic trouble code check

(1) Check the tire pressure of all the wheels using the tire pressure gauge.
(2) Turn the ignition switch to the "ON" position.
(3) Turn the ignition switch to the "ON" position, and adjust the pressure to the recommended tire pressure.
(4) Check if the DTC is set.

Q: Is DTC C1912, C1922, C1932 or C1942 set?

YES : Go to Step 5.

NO : The procedure is complete.

STEP 5. Diagnostic trouble code check

(1) Drive the vehicle for five minutes.

NOTE: Even within 5 minutes, if the TPMS warning light goes out, finish the driving and perform the operation (2).

(2) Check if the DTC is set.

Q: Is DTC C1912, C1922, C1932 or C1942 set?

YES : Go to Step 6.

NO : The procedure is complete.

STEP 6. Tire pressure check by M.U.T.-III

(1) Perform the transmitter check using the M.U.T.-III, and check the tire pressure values of all the wheels.
(2) Check the tire pressure of all the wheels using the tire pressure gauge.
(3) Compare the measured value (1) with (2).

OK: 20 kPa (2.9 psi) or less

NOTE: Do not replace the TPMS transmitter which cannot be checked.

Q: Is the check result normal?

YES : Go to Step 7.
NO : Replace the WCM and register the ID codes (Refer to P.42C-98). Then go to Step 9.

STEP 7. Tire pressure check by M.U.T.-III

(1) Perform the transmitter check using the M.U.T.-III, and check the tire pressure values of all the wheels.
(2) Check the tire pressure of all the wheels using the tire pressure gauge.
(3) Compare the measured value (1) with (2).

OK: 20 kPa (2.9 psi) or less

Q: Is the check result normal?

YES : Replace the TPMS transmitter and register the ID codes (Refer to P.42C-98). Then go to Step 8.
NO : Replace the WCM and register the ID codes (Refer to P.42C-98). Then go to Step 9.

STEP 8. Recheck for diagnostic trouble code.

(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1912, C1922, C1932 or C1942 set?

YES : Replace the WCM and register the ID codes (Refer to P.42C-98). Then go to Step 9.
NO : The procedure is complete.

STEP 9. Recheck for diagnostic trouble code.

(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1912, C1922, C1932 or C1942 set?

YES : Start over at Step 1.
NO : The procedure is complete.

DTC C1915: Transmitter OFF Mode 1
DTC C1925: Transmitter OFF Mode 2
DTC C1935: Transmitter OFF Mode 3
DTC C1945: Transmitter OFF Mode 4

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

WCM receives the wheel speed information from ABS-ECU via the CAN-bus line. Although WCM receives the information that the wheel is not currently rotated from ABS-ECU, if the TPMS transmitter sends the information that the wheel is rotated, this code is set.

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:
- OFF mode cancellation not performed
- Damaged wiring harness and connector
- Malfunction of TPMS transmitter
- Malfunction of WCM
- Malfunction of ABS-ECU
- Malfunction of ETACS-ECU

DIAGNOSIS

Required Special Tools:
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics
Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-189). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

(1) Start the engine and drive the vehicle at 5 km/h (3 mph) or more.
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Turn the ignition switch to the "ON" position.
(4) Check if the DTC is set.
(5) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1915, C1925, C1935 or C1945 set?

YES : Go to Step 3.
NO : The procedure is complete.

STEP 3. Diagnostic trouble code check

(1) Start the engine and drive the vehicle at 5 km/h (3 mph) or more.
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Turn the ignition switch to the "ON" position.
(4) Check if the DTC is set.
(5) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1915, C1925, C1935 and C1945 set?

YES : Replace the TPMS transmitters of all the four wheels, and register ID codes. (Refer to P.42C-98.) Then go to Step 5.
NO : Go to Step 4.

STEP 4. Check for TPMS transmitter.

Refer to P.42C-109.

NOTE: The TPMS transmitter which cannot be checked may be faulty or the ID code may not be registered, thus do not replace it, but register the ID code. If the transmitter is faulty, it is replaced in the ID code registration process.

Q: Is the check result normal?

YES : Among the checked TPMS transmitters, replace the TPMS transmitters to which the DTC is set, and then register the ID codes. (Refer to P.42C-98.) Then go to Step 5.
NO : Even when no transmitter is checked, register the ID codes. (Refer to P.42C-98.) Then go to Step 5.

STEP 5. Diagnostic trouble code recheck after register the ID codes

(1) Turn the ignition switch to the "ON" position.
(2) Check if the DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC C1915, C1925, C1935 or C1945 set?

YES : Replace the WCM and register the ID codes (Refer to P.42C-98). Then start over at Step 1.
NO : The procedure is complete.

DTC U0019: Bus off (CAN-B)

⚠ CAUTION

- **If DTC U0019 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DTC SET CONDITION

If the CAN-B circuit malfunctions, the WCM sets DTC U0019.

TECHNICAL DESCRIPTION(COMMENT)

If WCM cannot perform the data transmission in normal conditions due to a malfunction of the CAN-B bus circuit, WCM determines that there is a problem.

TROUBLESHOOTING HINT

The CAN bus line may be defective

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1.Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.

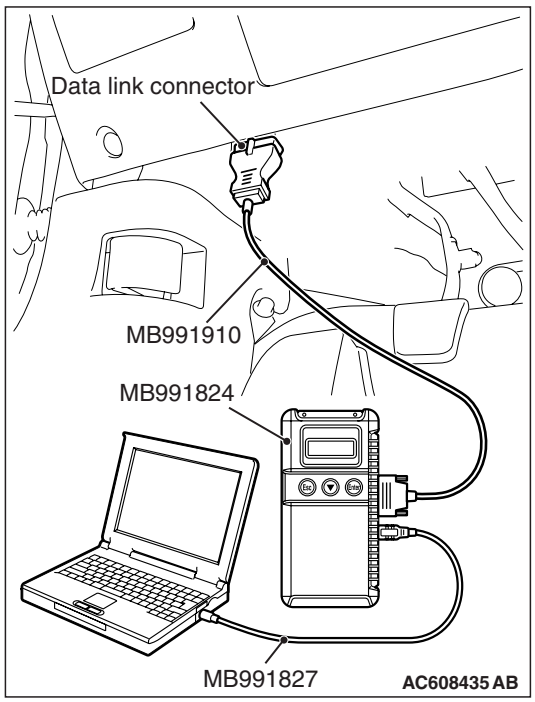
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Go to Step 2.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).



STEP 2. Using scan tool MB991958, diagnose the CAN bus line.

(1) Turn the ignition switch to the "ON" position.
(2) Diagnose the CAN bus line.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

DTC U0141: ETACS-ECU CAN timeout

⚠ CAUTION

- **If DTC U0141 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION

If the signal from ETACS-ECU cannot be received, the WCM sets DTC U0141.

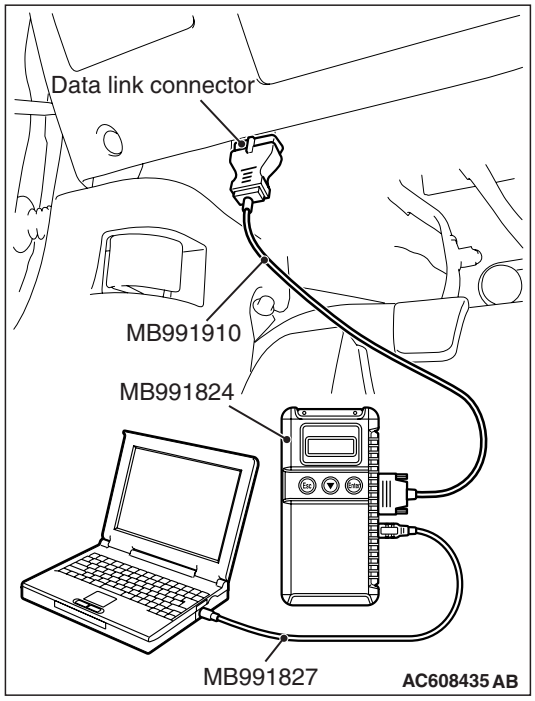
TROUBLESHOOTING HINTS

- Malfunction of CAN bus line
- Malfunction of WCM
- Malfunction of ETACS-ECU

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check again if the DTC is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to GROUP 54A – ETACS, Diagnose P.54A-482).
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

TSB Revision

DTC U0151: SRS-ECU CAN timeout

⚠ CAUTION
- **If DTC U0151 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

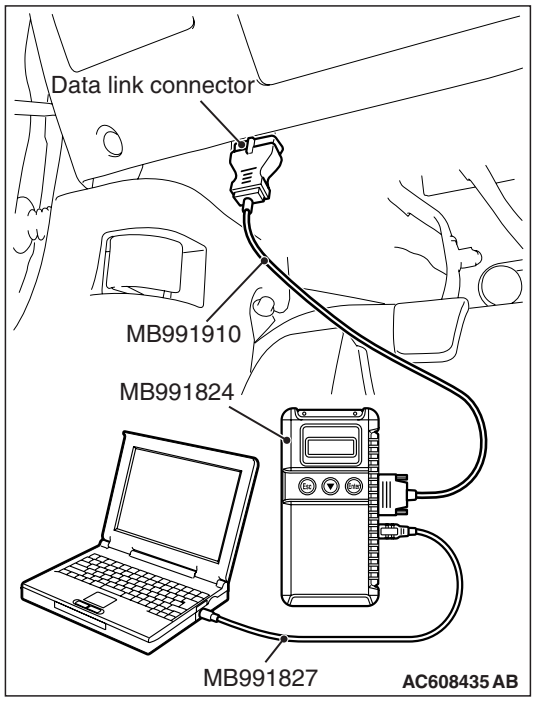
DIAGNOSTIC FUNCTION
If no signal from SRS-ECU can be received, WCM sets diagnostic trouble code U0151.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective
- The SRS-ECU may be defective
- Malfunction of WCM

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the SRS-ECU diagnostic trouble code.
Check again if the DTC is set to the SRS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Troubleshooting P.52B-31).
NO : Go to Step 3.

TSB Revision

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

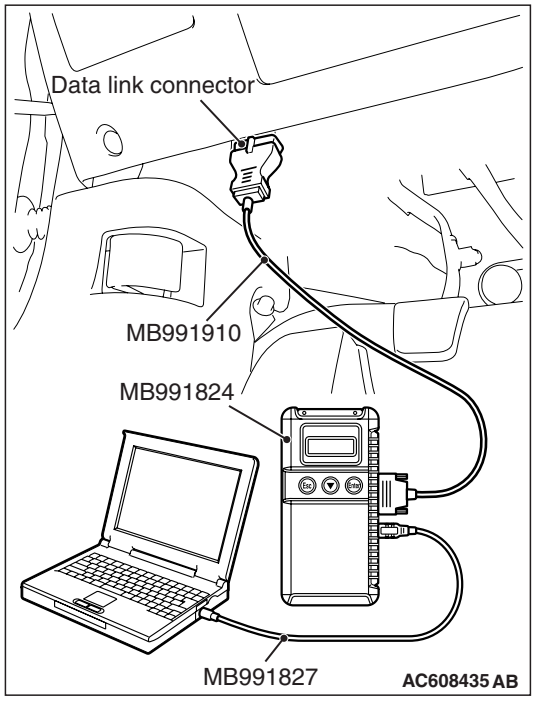
DTC U0154: Occupant classification-ECU CAN timeout

⚠ CAUTION
- **If DTC U0154 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from occupant classification-ECU cannot be received, the WCM sets DTC U0154.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The WCM may be defective.
- The occupant classification-ECU may be defective.

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the SRS-ECU diagnostic trouble code.

Check if DTC is set to the SRS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Diagnosis P.52B-280).
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

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DTC U0155: Combination meter CAN timeout

⚠ CAUTION

- **If DTC U0155 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

TROUBLE JUDGMENT

If no signal from the combination meter can be received, WCM sets DTC U0155.

TROUBLESHOOTING HINTS

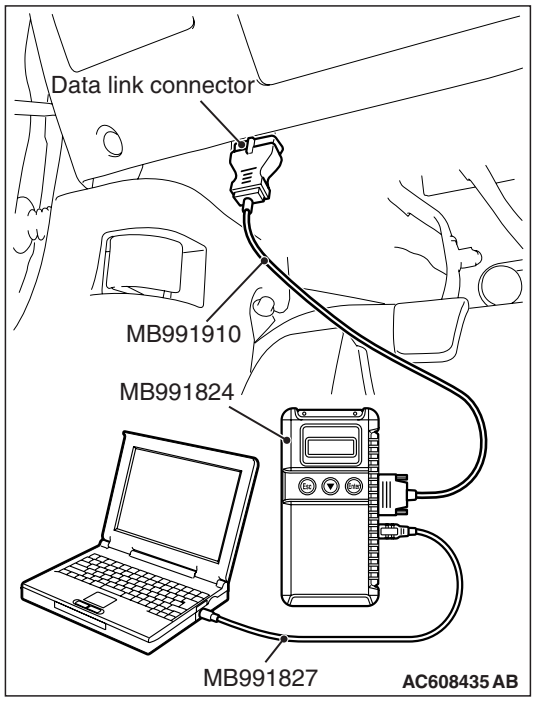
- Malfunction of CAN bus line
- Combination meter malfunction
- Malfunction of WCM

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the combination meter diagnostic trouble code.

Check if DTC is set to the combination meter.

Q: Is the DTC set?

YES : Troubleshoot the combination meter (Refer to GROUP 54A, Diagnosis P.54A-23).
NO : Go to Step 3.

TSB Revision

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0155 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the combination meter.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the WCM. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-13)

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the WCM. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-13).

DTC U0164: A/C-ECU CAN timeout

⚠ CAUTION

- **If DTC U0164 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION

If the signal from A/C-ECU cannot be received, the WCM sets DTC U0164.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The A/C-ECU may be defective.
- The WCM may be defective.

DIAGNOSIS

Required Special Tools:

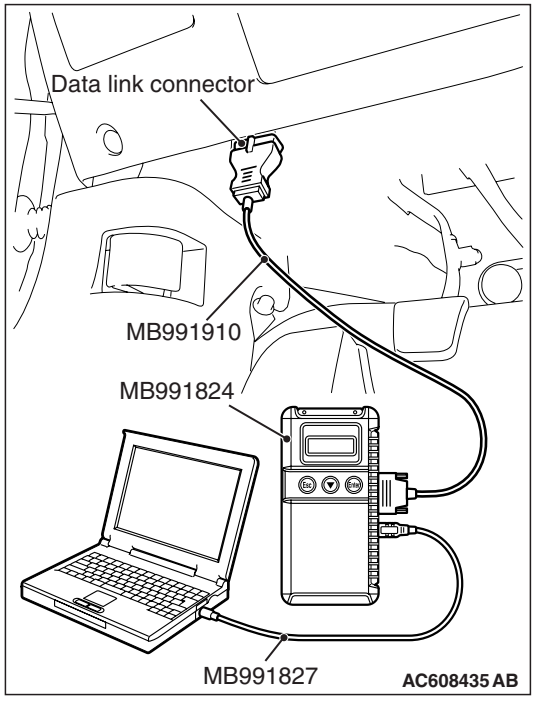
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.



Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the A/C diagnostic trouble code

Check if DTC is set to the A/C-ECU.

Q: Is the DTC set?

YES : Troubleshoot the A/C (Refer to GROUP 55A, Manual A/C Diagnosis P.55A-8 or GROUP 55B, Auto A/C Diagnosis P.55B-7).
NO : Go to Step 3.

TSB Revision

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

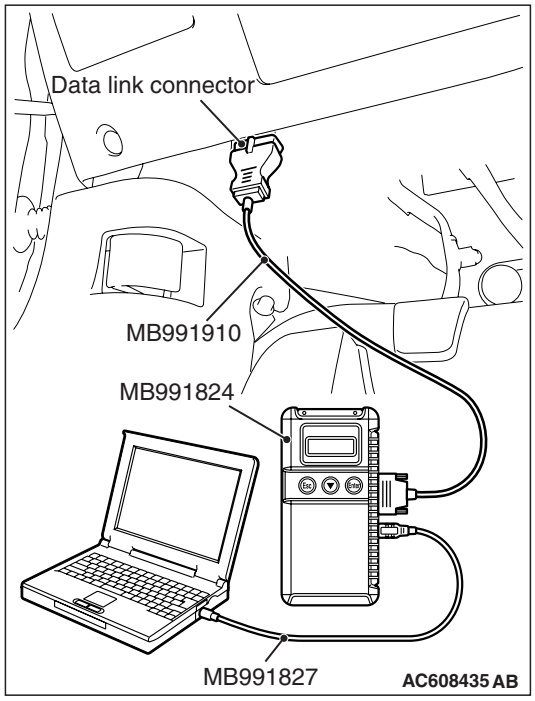
DTC U0184: Audio CAN timeout

⚠ CAUTION
- **If DTC U0184 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from radio and CD player or CD changer cannot be received, the WCM sets DTC U0184.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The WCM may be defective.
- The radio and CD player or CD changer may be defective.

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the audio diagnostic trouble code.

Check again if the DTC is set to the audio.

Q: Is the DTC set?

YES : Troubleshoot the radio and CD player (Refer to GROUP 54A –Radio and CD player, Diagnosis <radio and CD player> P.54A-239).
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

TSB Revision

DTC U0195: Satellite radio tuner CAN timeout

⚠ CAUTION
- **If DTC U0195 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT

If the signal from satellite radio tuner cannot be received, the WCM sets DTC U0195.

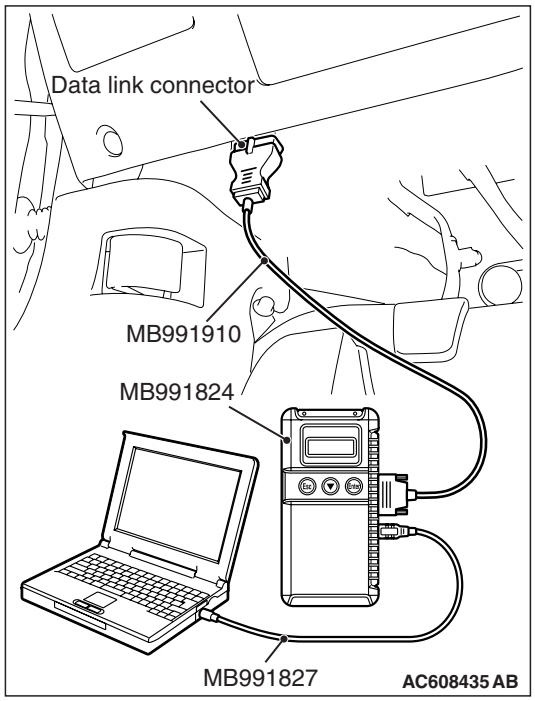
TROUBLESHOOTING HINTS

- The satellite radio tuner may be defective.
- The WCM may be defective.
- The CAN bus may be defective.

DIAGNOSIS

Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.



⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the satellite radio tuner diagnostic trouble code.

Check if DTC is set to the satellite radio tuner.

Q: Is the DTC set?

YES : Troubleshoot the satellite radio. (Refer to GROUP 54A, Diagnosis P.54A-451<Satellite radio tuner>).
NO : Go to Step 3.

TSB Revision

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner, then go to Step 4.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the satellite radio tuner and the WCM. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-13).

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the satellite radio tuner and the WCM. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-13).

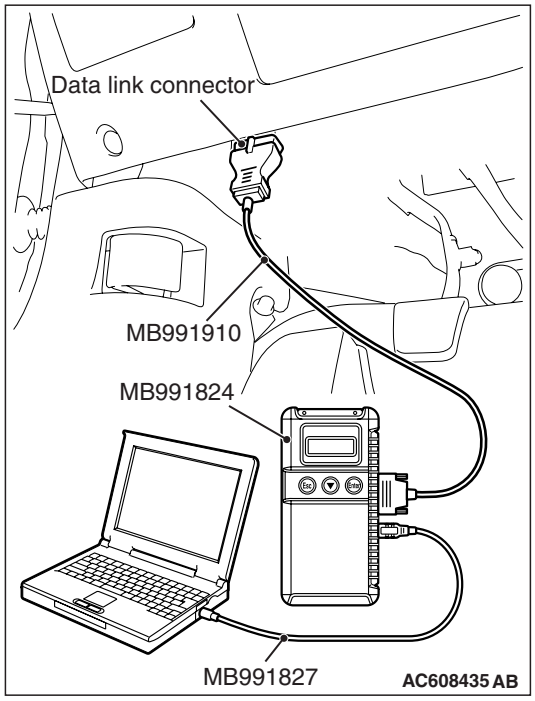
DTC U0197: Hands free module CAN timeout

⚠ CAUTION
- **If DTC U0197 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from hands free module cannot be received, the WCM sets DTC U0197.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The WCM may be defective.
- The hands free module may be defective.

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the hands free module diagnostic trouble code.

Check again if the DTC is set to the hands free module.

Q: Is the DTC set?

YES : Troubleshoot the hands-free cellular phone system (Refer to GROUP 54A –Hands-free Cellular Phone, Diagnosis <hands-free cellular phone system>).
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8.)
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

TSB Revision

DTC U0245: Audio visual navigation unit CAN timeout

⚠ CAUTION
- **If DTC U0245 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from audio visual navigation unit cannot be received, the WCM sets DTC U0245.

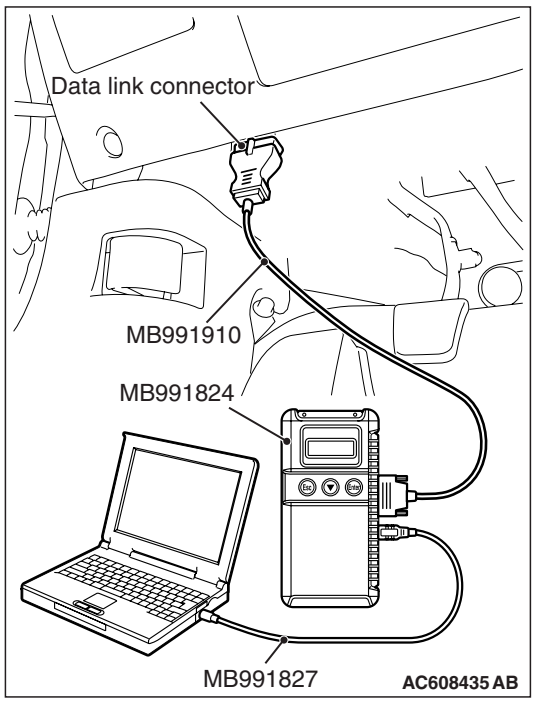
TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The WCM may be defective.
- The audio visual navigation unit may be defective.

DIAGNOSIS

Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the audio visual navigation unit diagnostic trouble code.
Check if DTC is set to the audio visual navigation unit.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to GROUP 54A – MMCS, Diagnosis <MMCS> P.54A-328).
NO : Go to Step 3.

TSB Revision

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

DTC U1412: Implausible Vehicle Speed Signal Received

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, Trouble code diagnosis P.54C-15).

DTC SET CONDITION

WCM receives the wheel speed information from ABS-ECU via the CAN-bus line. If WCM cannot receive the information about the wheel speed sensor from ABS-ECU, this code is set.

TROUBLESHOOTING HINTS

The most likely causes for this DTC to set are:
- Damaged wiring harness and connector
- Malfunction of ABS-ECU
- Malfunction of WCM
- Malfunction of ETACS-ECU

DIAGNOSIS

Required Special Tools:
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

STEP 1. M.U.T.-III CAN bus diagnostics
Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics table P.54C-189). On completion, go to Step 2.

TSB Revision

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC U1412 set?

YES : Go to Step 3.
NO : The procedure is complete.

STEP 3. Vehicle speed check by combination meter

During the vehicle driving, check that the correct vehicle speed is displayed on the combination meter.

Q: Is the check result normal?

YES : Replace the WCM and register ID codes (Refer to P.42C-98). Then go to Step 6.
NO : Go to Step 4.

STEP 4. Check for other diagnostic trouble code.

Check if the diagnostic trouble code is set from ABS-ECU <Refer to GROUP 35B, diagnostic trouble code chart P.35B-8 (vehicle with ABS)> or ECM <Refer to GROUP 13A, diagnostic trouble code chart P.13A-46 (vehicle without ABS)>.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Carry out the relevant troubleshooting.<Refer to GROUP 35B, diagnostic trouble code chart P.35B-8 (vehicle with ABS) or GROUP 13A, diagnostic trouble code chart P.13A-46 (vehicle without ABS)>. Then go to Step 5.

STEP 5. Check for other diagnostic trouble code.

Check if the diagnostic trouble code is set from ETACS-ECU (Refer to GROUP 54A, ETACS –diagnostic trouble code chart P.54A-482).

Q: Is the check result normal?

YES : Diagnose the combination meter. (Refer to GROUP 54A, Combination meter –diagnostic trouble code chart P.54A-23) Go to Step 6.
NO : Carry out the relevant troubleshooting.(Refer to GROUP 54A, ETACS –diagnostic trouble code chart P.54A-482). Then go to Step 6.

STEP 6. Recheck for diagnostic trouble code.

(1) Turn the ignition switch to the "LOCK" (OFF) position.
(2) Turn the ignition switch to the "ON" position.
(3) Check if the DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC U1412 set?

YES : Start over at Step 1.
NO : The procedure is complete.

DTC U1415: Coding not completed/Data fail

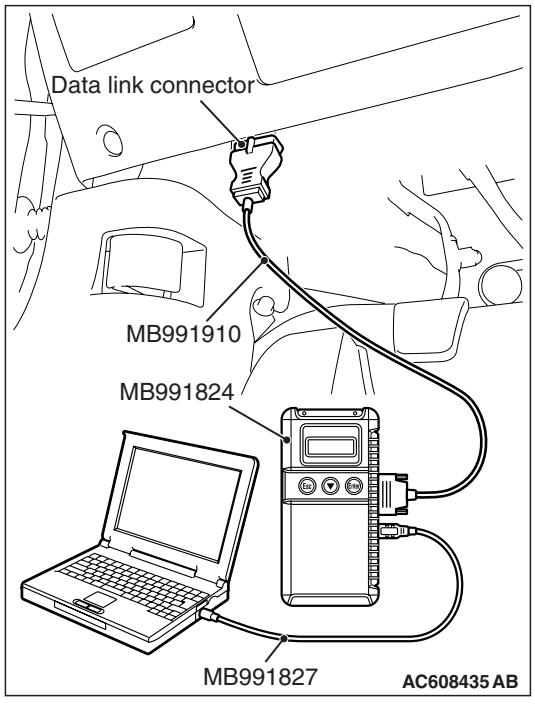
⚠ CAUTION
- **If DTC U1415 is set, diagnose the CAN bus lines.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
If the vehicle information data is not registered to the combination meter, the WCM sets DTC U1415.

JUDGMENT CRITERIA
With the global coding counter value "0," if all the global coding data (vehicle information) are not stored, the WCM determines that a problem has occurred.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The WCM may be defective.
- The ETACS-ECU may be defective.

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).

STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.
Check if DTC is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to GROUP 54A –ETACS, Diagnosis P.54A-482).

NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

DTC U1417: Implausible coding data

⚠ CAUTION

- **If diagnostic trouble code U1417 is set in WCM, always diagnose the CAN bus lines. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**
- **When diagnostic trouble code U1417 is set in WCM, the diagnostic trouble code may also be set in ETACS-ECU. When the diagnostic trouble code is set in ETACS-ECU, carry out the diagnosis of the diagnostic trouble code for ETACS-ECU first.**

CIRCUIT OPERATION

WCM receives the vehicle information stored in the ETACS-ECU via CAN bus lines.

DTC SET CONDITIONS

WCM communicates with ETACS-ECU via CAN bus lines. This diagnostic trouble code is set when the vehicle information received from the ETACS-ECU is invalid.

TSB Revision

PROBABLE CAUSES

- Malfunction of ETACS-ECU
- Engine control module malfunction
- ETACS-ECUs have been interchanged between two vehicles.
- WCM malfunction
- External noise interference
- WCMs have been interchanged between two vehicles.

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

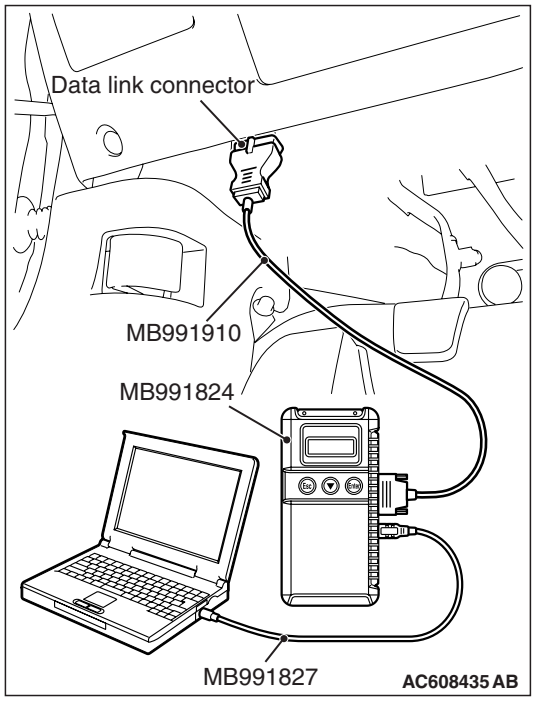
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).



STEP 2. Using scan tool MB991958, check for other system diagnostic trouble code.
Check if DTC is set to the ETACS-ECU or engine control module.

Q: Is the DTC set?

YES (DTC is set to ETACS-ECU.) : Troubleshoot the ETACS (Refer to GROUP 54A –ETACS, Diagnosis P.54A-482).

YES (DTC is set to the engine control module.) : Troubleshoot the MFI system (Refer to GROUP 13A – MFI, Diagnosis P.13A-46).

NO : Go to Step 3.

STEP 3. Check part number of ETACS-ECU
Check the part number of ETACS-ECU.

OK: 8637A313

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace ETACS-ECU.

STEP 4. Check part number of WCM
Check the part number of WCM.

OK: MN141352

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace WCM and register the ID codes (Refer to P.42C-8).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the WCM.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).

DATA LIST REFERENCE TABLE

M1427501000034

Item No.	Scan tool MB991958 display	Check conditions	Normal conditions
01	Received key data(ID)	–	Key ID for stored ignition key
02	Received key data(button)	–	Switch display of transmitter
13	Number of registered IMMOB.key	–	Number of stored ignition keys (Number of registered ignition keys that can start the engine)
21	Air pressure, Tire 1	–	–
22	Air pressure, Tire 2		
23	Air pressure, Tire 3		
24	Air pressure, Tire 4		
25*	Air pressure, Tire 5		
31	Acceleration, Tire 1	–	–
32	Acceleration, Tire 2		
33	Acceleration, Tire 3		
34	Acceleration, Tire 4		
35*	Acceleration, Tire 5		
36	Threshold of PRS. warning	The tire pressure is within the specified value range.	OFF
		The tire pressure is not within the specified value range.	ON
37	Threshold of PRS. warning release	The tire pressure is within the specified value range.	ON
		The tire pressure is not within the specified value range.	OFF
38	Number of registered TPMS ID	–	Number of stored TPMS
39	Ignition signal(CAN data)	Ignition switch status information received from ETACS-ECU via CAN:ON	ON
		Ignition switch status information received from ETACS-ECU via CAN:OFF	OFF
40	Ignition signal(Port input)	Ignition switch: ON	ON
		Ignition switch: OFF	OFF
41	VSS	Drive the vehicle	The scan tool and the speedometer readings are approximately the same
50	Registered ID reception, Tier1	Ignition switch: ON	Yes
		Ignition switch: OFF	No
51	Registered ID reception, Tier2	Ignition switch: ON	Yes
		Ignition switch: OFF	No

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Item No.	Scan tool MB991958 display	Check conditions	Normal conditions
52	Registered ID reception, Tier3	Ignition switch: ON	Yes
		Ignition switch: OFF	No
53	Registered ID reception, Tier4	Ignition switch: ON	Yes
		Ignition switch: OFF	No
54*	Registered ID reception, Tier5	Ignition switch: ON	Yes
		Ignition switch: OFF	No
61	Air pressure, Tire1(not adjusted)	–	–
62	Air pressure, Tire2(not adjusted)		
63	Air pressure, Tire3(not adjusted)		
64	Air pressure, Tire4(not adjusted)		
65*	Air pressure, Tire5(not adjusted)		

*NOTE: * shows that it is displayed but not used.*

TROUBLE SYMPTOM CHART

M1427500400040

⚠ CAUTION

During diagnosis, a DTC associated with other system may be set when the ignition switch is turned on with connector(s) disconnected. On completion, check all systems for DTC(s). If DTC(s) are set, erase them all.

Trouble symptom	Inspection procedure number	Reference page
Scan tool cannot communicate with WCM.	1	P.42C-75
The ignition key cannot be registered using scan tool.	2	P.42C-76
Engine does not start (cranking but no initial combustion).	3	P.42C-78
Check the WCM power supply and ground circuits.	4	P.42C-80
Keyless entry system does not work.	5	P.42C-83
Keyless entry hazard light answerback function, the dome light answerback function or the horn answerback function does not work normally.	6	P.42C-87
The timer lock function does not work after doors have been unlocked by the keyless entry system.	7	P.42C-89
The trunk is not opened when the keyless entry transmitter "TRUNK" button is operated.	8	P.42C-90

SYMPTOM PROCEDURES

Inspection Procedure 1: Scan tool cannot communicate with WCM.

⚠ CAUTION
Before replacing the ECU, ensure that the communication circuit is normal.

TECHNICAL DESCRIPTION (COMMENT)

WCM communicates with scan tool via CAN. Therefore, communication error of WCM is suspected.

TROUBLESHOOTING HINTS

- Malfunction of the power supply or ground of WCM
- Malfunction of CAN bus line

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

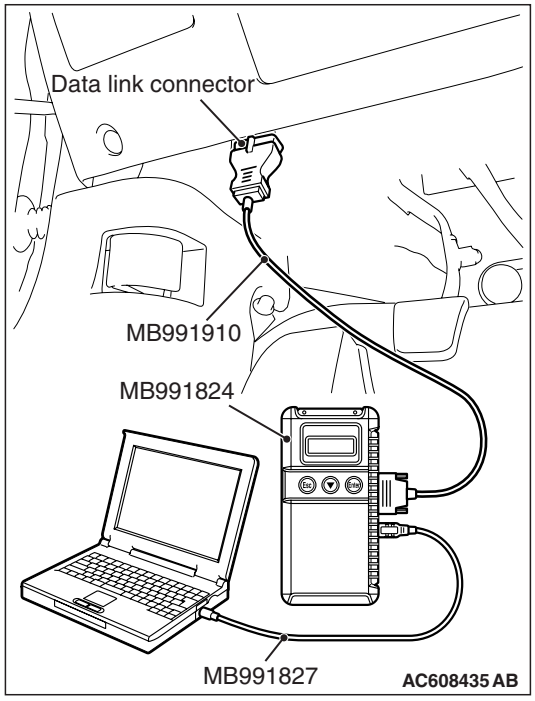
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).



STEP 2. Check the power supply circuit and the ground circuit to WCM.
Refer to Inspection Procedure 4 "Check WCM power supply and ground circuits" P.42C-80.

Q: Is the power supply circuit and the ground circuit to WCM in good condition ?

YES : Go to Step 3.
NO : Repair the power supply circuit and the ground circuit to WCM.

STEP 3. Retest the system
Check if scan tool can communicate with WCM.

Q: Does the scan tool communicate with WCM?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 –How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-13).
NO : Replace WCM and register the ID codes (Refer to P.42C-8).

Inspection Procedure 2: The ignition key cannot be registered using scan tool.

TECHNICAL DESCRIPTION (COMMENT)

If only some ignition keys cannot be registered, the ignition key itself may be faulty. If no ignition key can be registered, the key assembly may have already been registered for another vehicle, or the WCM may be faulty.

TROUBLESHOOTING HINTS

- Malfunction of the ignition key
- Damaged wiring harness and connectors
- Malfunction of WCM
- Ignition key registered for other vehicle

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the ignition key inserted in the key cylinder for interference.

Q: Are there other ignition keys or anything that interferes with the communication (things that generate radio waves such as magnets and an air-cleaning device that has a power plug) near the ignition key inserted in the key cylinder?

YES : Move away or remove other ignition keys or things that interfere with the communication (things that generate radio waves such as magnets and a air-cleaning device that has a power plug) near the ignition key. Then, go to step 2.
NO : Go to Step 3.

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STEP 2. Retest the system

Check that the ignition key can be registered.

Q: Is the ignition key that cannot be registered using scan tool?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check which ignition key cannot be registered.

Q: Can any one of the ignition keys be registered?

YES (Only some keys) : Replace the key that cannot be registered and register the ID codes (Refer to P.42C-8). After registering the ID codes, go to Step 5 .

NO (All keys) : Go to Step 4.

STEP 4. Retest the system

Check the scan tool screen when the key was not able to be registered.

Q: Is the error message of scan tool screen "Abnormality in key" ?

YES (Abnormality in key) : Carry out DTC B1A25: Key ID unmatched and DTC B1A35: Transponder read error (Refer to P.42C-24 <B1A25>, P.42C-28 <B1A35>). Then, go to Step 5 .

NO (ECU internal error) : Replace WCM and register the ID codes (Refer to P.42C-8).

STEP 5. Retest the system

Check that the ignition key can be registered.

Q: Is the ignition key that cannot be registered using scan tool?

YES : Replace WCM and register the ID codes (Refer to P.42C-8).

NO : The procedure is complete.

Inspection Procedure 3: Engine does not start (cranking but no initial combustion).

TECHNICAL DESCRIPTION (COMMENT)

If the fuel injection does not work, WCM and the MFI system may have a problem. This symptom is not considered abnormal when the engine is started by an ignition key that has not been registered.

TROUBLESHOOTING HINTS

- Malfunction of the MFI system
- Malfunction of WCM
- Malfunction of CAN bus line
- Malfunction of the transponder
- VIN not programmed

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the battery voltage.

Measure the battery voltage when cranking.

- The voltage should measure 8 volt or more.

Q: Is the measured voltage 8 volt or more?

YES : Go to Step 2.

NO : Check the battery (Refer to GROUP 54A –Battery test P.54A-6).

STEP 2. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

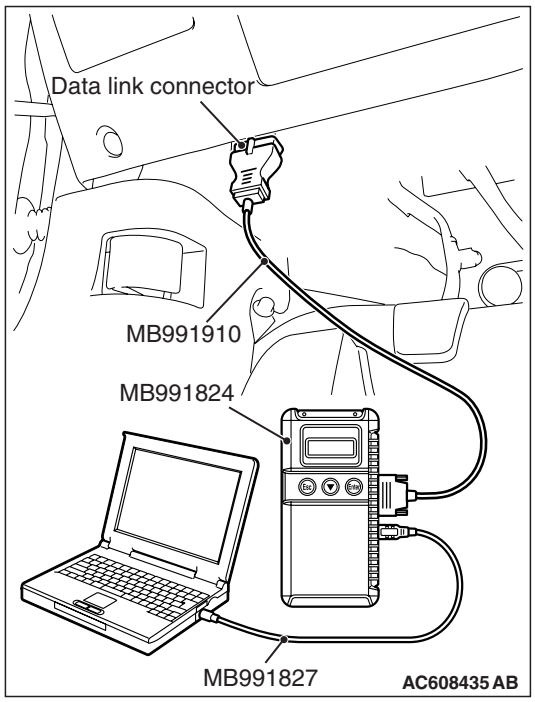
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 3.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-16).



STEP 3. Using scan tool MB991958, check for MFI system diagnostic trouble code.

Check if DTC is set to the engine control module.

Q: Is the DTC set?

YES : Troubleshoot the MFI system (Refer to GROUP 13A, Diagnosis P.13A-46).

NO : Go to Step 4.

STEP 4. Using scan tool MB991958, check for WCM diagnostic trouble code.

Check if DTC is set to the WCM.

Q: Is the DTC set?

YES : Troubleshoot the WCM (Refer to P.42C-6).

NO : Go to Step 5.

STEP 5. Check that the engine starts.

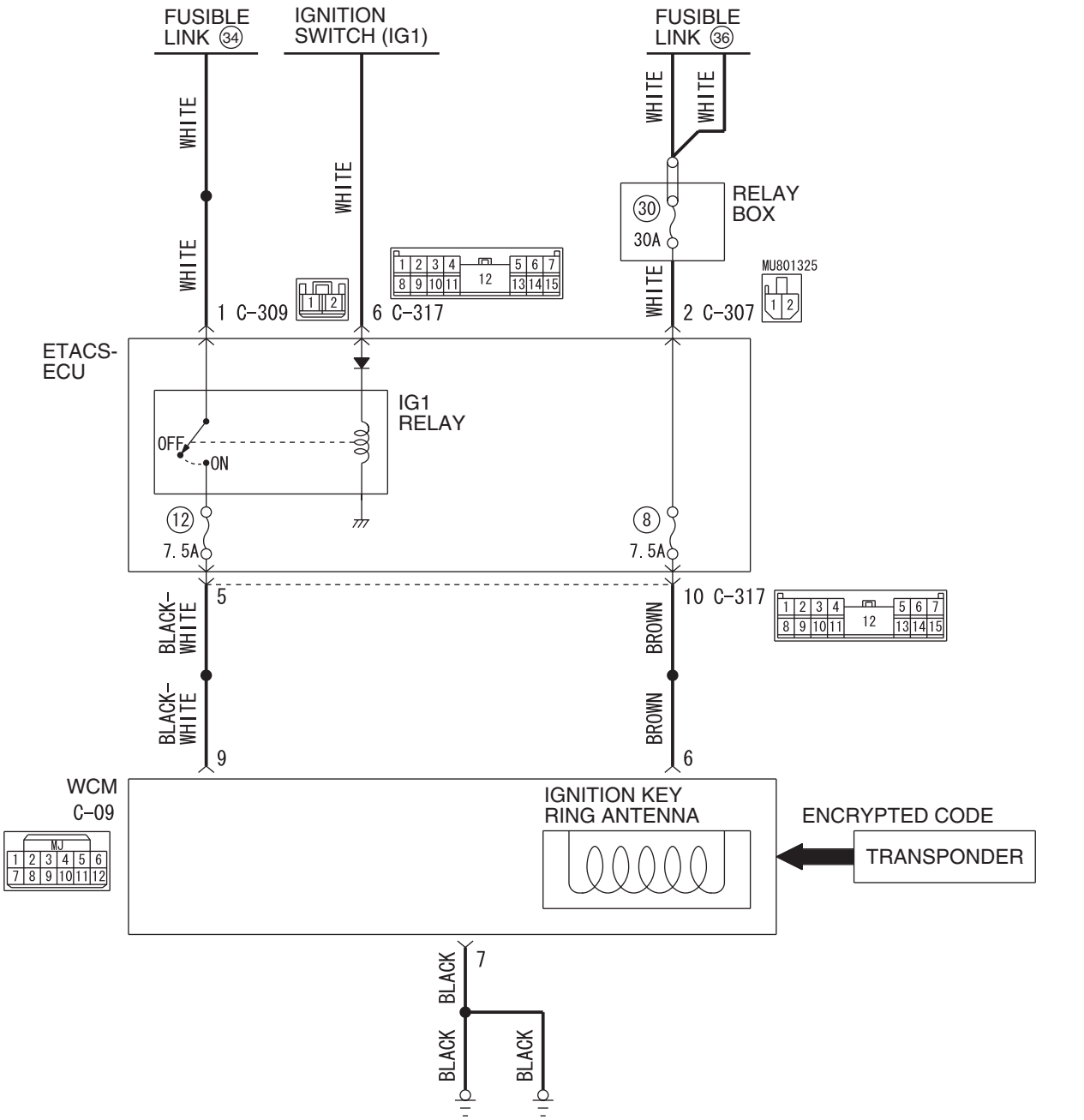
Q: Does the engine start?

YES : The procedure is complete.

NO : Refer to GROUP 13A , Diagnosis P.13A-46. When the cause of the failure cannot be tracked down by the troubleshooting in GROUP 13A, replace WCM and register the ID codes (Refer to P.42C-8).

Inspection Procedure 4: Check the WCM power supply and ground circuits.

WCM Power Supply Circuit



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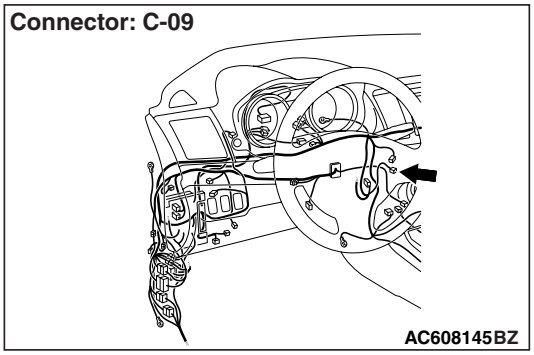
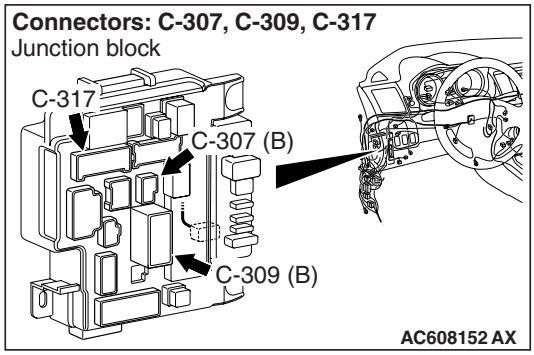




DIAGNOSIS

Required Special Tools:
- MB992006: Extra fine probe
- MB991223: Harness set

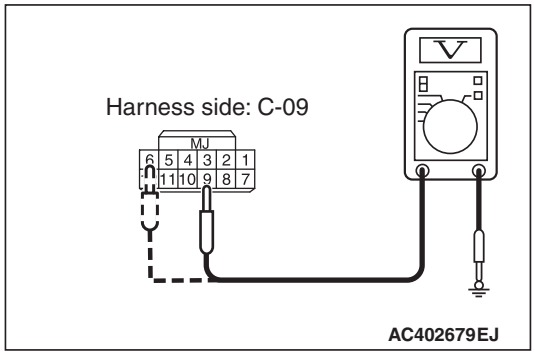
STEP 1. Check WCM connector C-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is the WCM connector C-09 in good condition?

YES : Go to Step 2.
NO : Repair the defective connector.

STEP 2. Check the battery power supply circuit to the WCM. Measure the voltage at WCM connector C-09.

(1) Disconnect WCM connector C-09 and measure the voltage available at the harness side of the connector.
(2) Turn the ignition switch to the ON position.
(3) Measure the voltage between terminal No. 6 or 9 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).



Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 4.
NO : Go to Step 3.

STEP 3. Check the wiring harness between WCM connector C-09 (terminal No. 9, 6) and fusible link (36, 34).

NOTE: Before checking the wiring harnesses, check the ETACS-ECU connectors C-307, C-309, and C-317, and repair if necessary.

- Check the power supply line for open circuit.

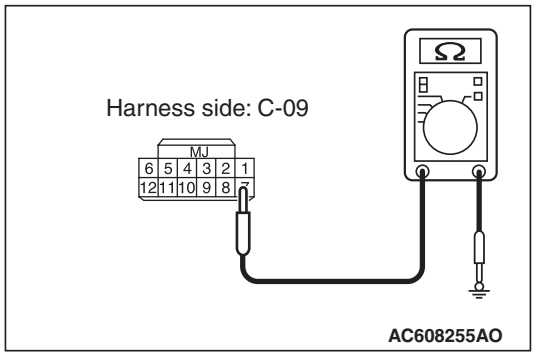
Q: Is the wiring harness between WCM connector C-09 (terminal No. 9, 6) and fusible link (36, 34) in good condition?

YES : Go to Step 4.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the high-beam headlights illuminate normally.

STEP 4. Check the ground circuit to the WCM. Measure the resistance at WCM connector C-09.

(1) Disconnect the connector and measure the resistance at the wiring harness side.
(2) Turn the ignition switch to the OFF position.
(3) Measure the resistance between terminal No. 7 and ground.
- The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : The procedure is complete.

NO : Go to Step 5.

STEP 5. Check the wiring harness between the WCM connector C-09 (terminal No. 7) and ground.

- Check the ground wires for open circuit.

Q: Is the wiring harness between WCM connector C-09 (terminal No. 7) and ground in good condition?

YES : The procedure is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the high-beam headlights illuminate normally.

Inspection Procedure 5: Keyless entry system does not work.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

The lock/unlock signals from the transmitter are received by WCM, and then sent to ETACS-ECU from WCM. When ETACS-ECU receives signals from the key reminder switch and all the door switches, ETACS-ECU actuates the keyless entry system.

TROUBLESHOOTING HINTS

- The key reminder switch may be defective
- The door switches may be defective
- The keyless entry transmitter may be defective
- The WCM may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- Option coding information

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

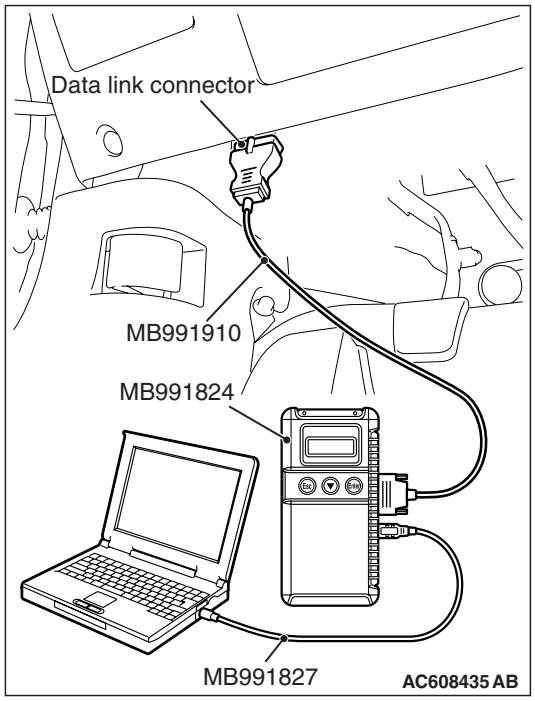
STEP 1. Using scan tool MB991958, check for CAN bus the diagnostic trouble code.

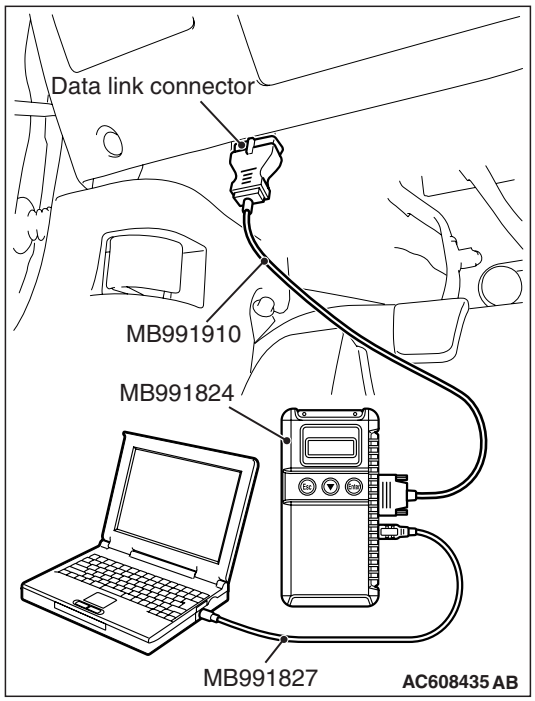
⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the CAN bus lines related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Repair the CAN bus line (Refer to GROUP 54C, CAN bus diagnostics table P.54C-15).
NO : Go to Step 2.





STEP 2. Using scan tool MB991958, read the diagnostic trouble code.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.42C-14.
NO : Go to Step 3.

STEP 3. Check the power supply system

With the ignition switch in the LOCK (OFF) position, check if the following function operates normally:

- Hazard warning light

Q: Is the check result normal?

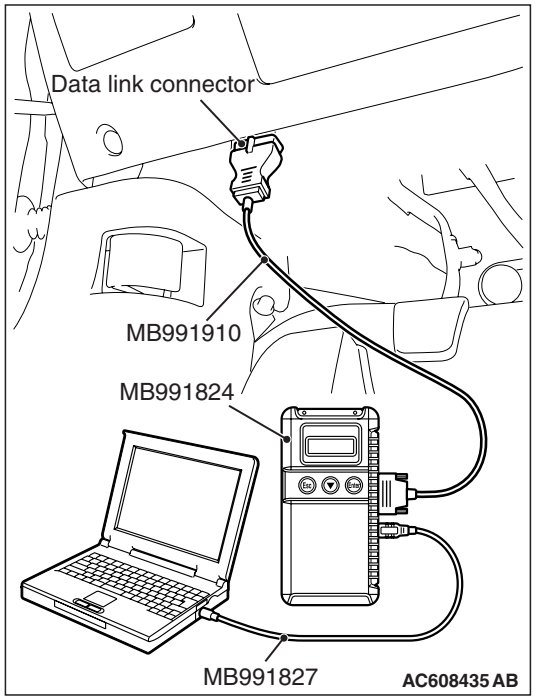
YES : Go to Step 4.
NO : Refer to GROUP 54A –Malfunction of ETACS-ECU power supply circuit P.54A-525.

STEP 4. Verify the central door locking system.

Check that the central door locking system works normally.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Refer to GROUP 42A –Troubleshooting P.42A-31.



STEP 5. Using scan tool MB991958, check data list.

Check the signals related to the keyless entry system operation.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."

(2) Turn the ignition switch to the "ON" position.

(3) Check the ETACS data list.

- Turn the ignition switch to the ON position.
- Close the driver's door.
- Close the passenger's door.
- Close the RH-side rear door.
- Close the LH-side rear door.
- Remove the ignition key from the ignition key cylinder.

Item No.	Item name	Normal condition
Item 254	IG voltage	Battery voltage
Item 256	Dr door ajar switch	Close
Item 257	As door ajar switch	Close
Item 258	RR door ajar switch	Close
Item 259	RL door ajar switch	Close
Item 264	Handle lock switch	Key in →Key out

(4) Turn the ignition switch to the "LOCK" (OFF) position.

OK: Normal condition are displayed.

Q: Are the check result normal?

YES <Normal conditions are displayed for all the items.> : Go to Step 6.

NO <Normal condition is not displayed for item No. 254.> : Refer to GROUP 54A, Inspection Procedure 2: ETACS-ECU does not receive any signal from the ignition switch (IG1) P.54A-531.

NO <Normal condition is not displayed for item No. 256.> : Refer to GROUP 54A, Inspection Procedure 5: ETACS-ECU does not receive any signal from the front door switch (LH) P.54A-545.

NO <Normal condition is not displayed for item No. 257.> : Refer to GROUP 54A, Inspection Procedure 6: ETACS-ECU does not receive any signal from the front door switch (RH) P.54A-543.

NO <Normal condition is not displayed for item No. 258.> : Refer to GROUP 54A, Inspection Procedure 8: ETACS-ECU does not receive any signal from the rear door switch (RH) P.54A-550.

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NO <Normal condition is not displayed for item No. 259.> : Refer to GROUP 54A, Inspection Procedure 7: ETACS-ECU does not receive any signal from the rear door switch (LH) P.54A-548.

NO <Normal condition is not displayed for item No. 264.> : Refer to GROUP 54A, Inspection Procedure 3: ETACS-ECU does not receive any signal from the key reminder switch. P.54A-533.

STEP 6. Using scan tool MB991958, check pulse check.

Check the signals related to the keyless entry system operation.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

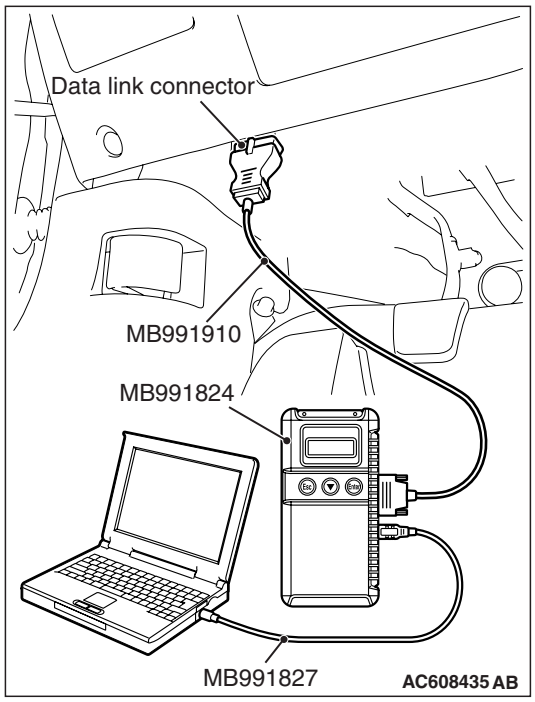
(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."

(2) Confirm the ETACS pulse check.

- Remove the ignition key from the ignition key cylinder.

Item name	Conditions
Transmitter switch	Turn the switch ON/OFF.

OK: The scan tool (M.U.T.-III) buzzer sounds.



Q: Is the check result normal?

YES : Go to Step 7.

NO : Refer to "Signals from transmitter switches are not received P.42C-96."

STEP 7. Retest the system.

Check if the keyless entry system works normally.

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 –How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction P.00-13).

NO : Replace WCM and register the ID codes (Refer to P.42C-8).

Inspection Procedure 6: Keyless entry hazard light answerback function, the dome light answerback function or the horn answerback function does not work normally.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If the hazard warning light and the dome light works normally, ETACS-ECU may be faulty. Also, the answerback function may have been disabled using the customization function.

TROUBLESHOOTING HINTS

- The turn signal lights may be defective
- The dome light may be defective
- The horn may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

STEP 1. Verify the operation hazard warning light.
Check that the hazard warning light illuminate normally.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Refer to GROUP 54A –inspection procedure 1: "Hazard warning light does not illuminate P.54A-219."

STEP 2. Verify the operation of the dome light.
Check that the dome lights illuminate normally.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Refer to GROUP 54A –inspection procedure 1 "The front dome light does not illuminate normally P.54A-198." or inspection procedure 2 "The rear dome light does not illuminate normally P.54A-202."

STEP 3. Verify the horn.
Check that the horn normally.

Q: Is the check result normal?

YES : Go to Step 4.
NO : Replace the horn (Refer to GROUP 54A, Horn P.54A-222).

STEP 4. Check the operation of the keyless entry system.
Operate the transmitter and check that all doors lock and unlock.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Refer to inspection procedure 5: "Keyless entry system does not work P.42C-83."

STEP 5. Check the customize function (Hazard light answerback).

Check that any one of the followings other than "Lock: 0, Unlock: 0" is set for "Hazard answerback" with a customization function.

- Lock:1, Unlock:2
- Lock:1, Unlock:0
- Lock:0, Unlock:2
- Lock:2, Unlock:1
- Lock:2, Unlock:0
- Lock:0, Unlock:1

Q: Is the check result normal?

YES : Go to Step 6.

NO : Set "Hazard answerback" to any one other than "Lock: 0, Unlock: 0" with a customization function (Refer to P.42C-110).

STEP 6. Check the customize function (Horn answerback).

Check that any one of the followings other than "Not sound horn" is set for "Horn chirp by keyless" with a customization function.

- Lock any time
- W lock any time

Q: Is the check result normal?

YES : Go to Step 7.

NO : Set "Horn chirp by keyless" to any one other than "Not sound horn" with a customization function (Refer to P.42C-110).

STEP 7. Check of the troubles

Check if the keyless entry answerback function works normally.

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction P.00-13).

NO : Replace ETACS-ECU.

Inspection Procedure 7: The timer lock function does not work after the doors have been unlocked by the keyless entry system.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If the timer lock function does not work normally, the keyless entry transmitter input signal circuit or ETACS-ECU may be faulty.

TROUBLESHOOTING HINTS

- The keyless entry transmitter may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

STEP 1. Check the operation of the keyless entry system.
Operate the transmitter and check that all doors lock and unlock.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Refer to inspection procedure 5: "Keyless entry system does not work P.42C-83."

STEP 2. Check the customize function.
The "Timer lock timer" has been set to one of the followings with the customization function. Check if the doors are locked at the set period.

- 30sec
- 60sec
- 120sec
- 180sec

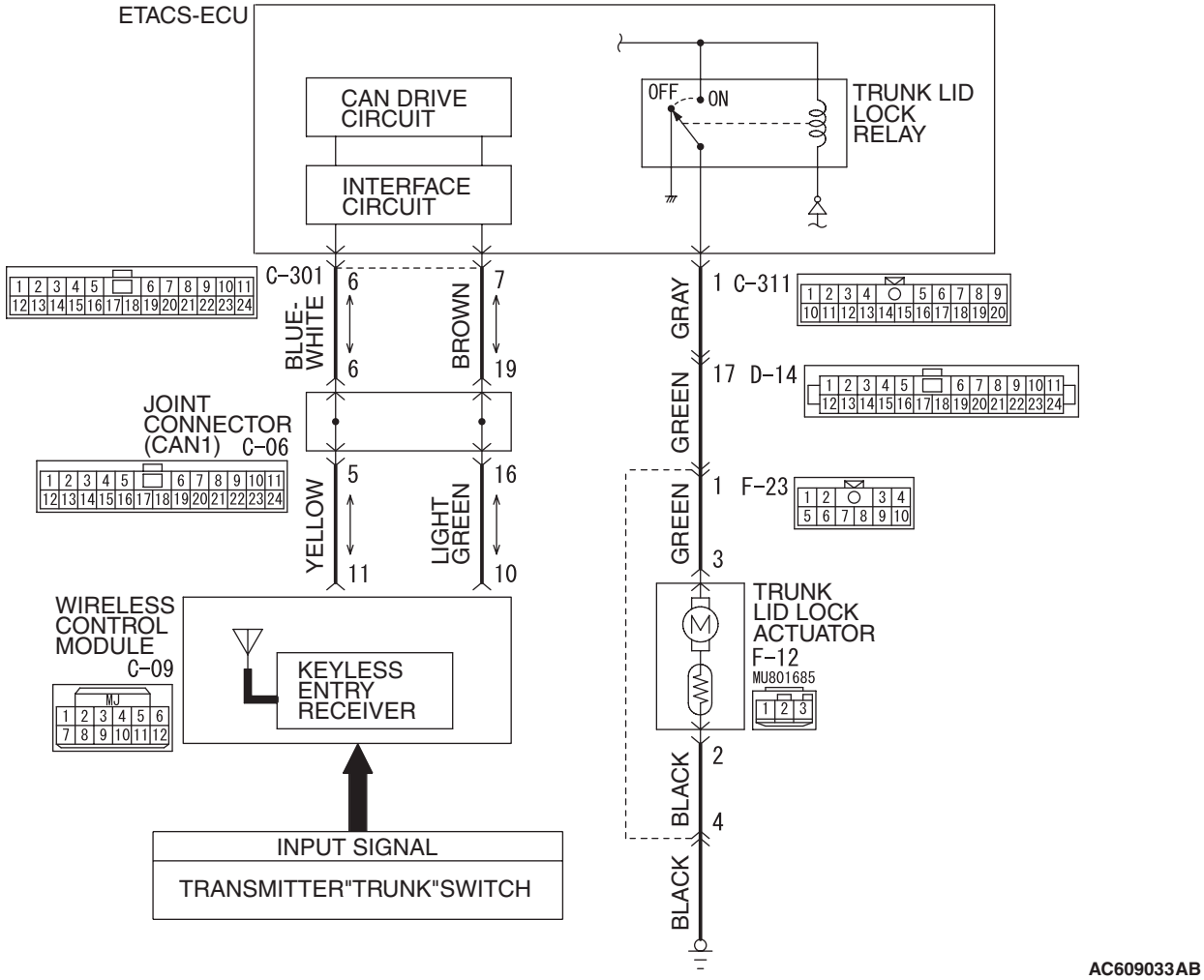
Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 –How to Use Troubleshooting/Inspection Service Points - How to Cope with Intermittent Malfunction P.00-13).
NO : Replace ETACS-ECU.

Inspection Procedure 8: The trunk is not opened when the keyless entry transmitter "TRUNK" button is operated.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Transmitter "TRUNK" Input Signal



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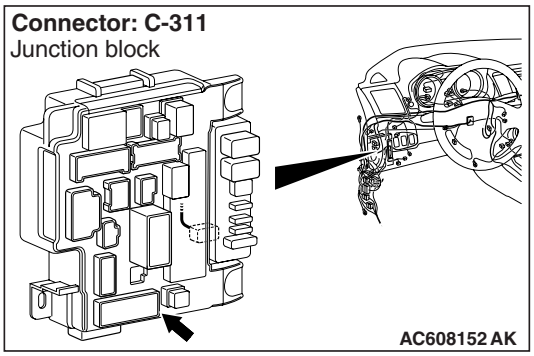

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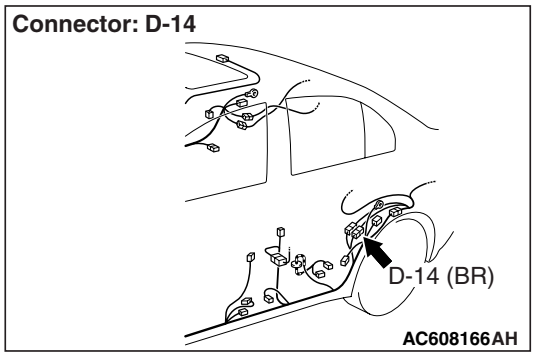
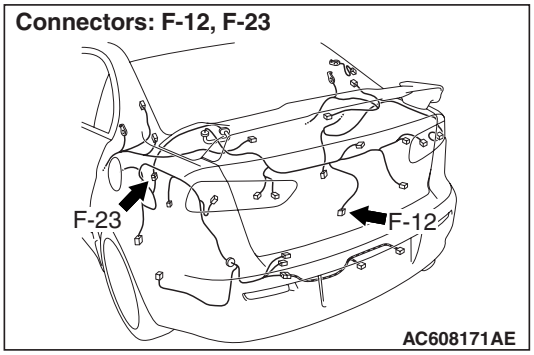


AC608166AH

TSB Revision



TECHNICAL DESCRIPTION (COMMENT)

WCM receives the trunk signal from the transmitter, and sends the signal to ETACS-ECU.

TROUBLESHOOTING HINTS

- The keyless entry transmitter may be defective
- The WCM may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

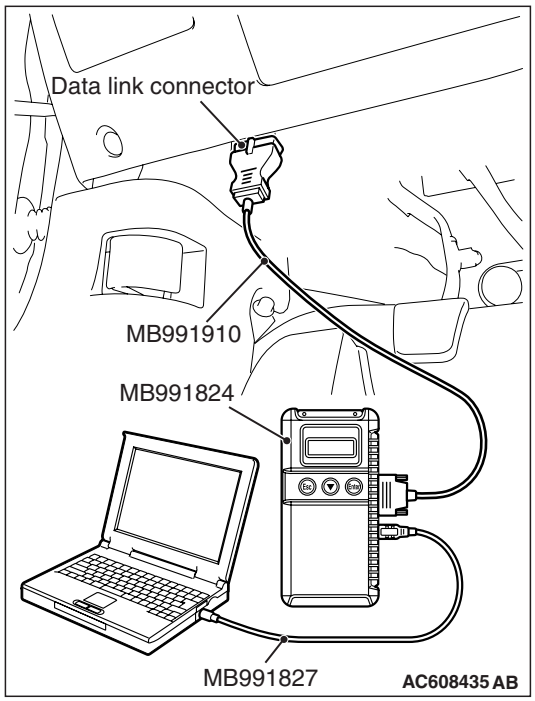
STEP 1. Check the operation of the keyless entry system.

Operate the transmitter and check that all doors lock and unlock.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to inspection procedure 5: "Keyless entry system does not work P.42C-83."



STEP 2. Using scan tool MB991958, check for diagnostic trouble code.

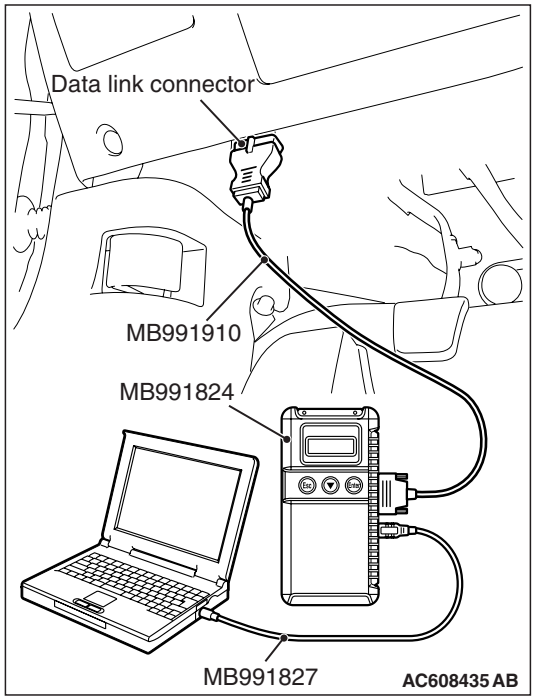
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.42C-14.
NO : Go to Step 3.



STEP 3. Using scan tool MB991958, check pulse check.

Check the signals related to the keyless entry system operation.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.42C-6."

(2) Confirm the ETACS pulse check.

- Remove the ignition key from the ignition key cylinder.

Item name	Conditions
Transmitter switch	Turn the switch ON/OFF.

OK: The scan tool (M.U.T.-III) buzzer sounds.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to "Signals from transmitter switches are not received P.42C-96."

STEP 4. Check trunk lid lock actuator connector F-12 and ETACS-ECU connector C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is trunk lid lock actuator connector F-12 and ETACS-ECU connector C-311 in good condition?

YES : Go to Step 5.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 5. Check the trunk lid latch assembly.

Remove the trunk lid latch assembly. Refer to GROUP 42A, Trunk lid removal and installation P.42A-174.

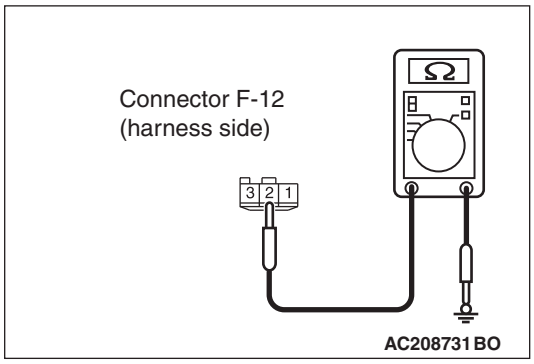
Lever position	Battery connection	Lever operation
At the "LOCK" position	• Connect terminal No.2 and the negative battery terminal. • Connect terminal No.3 and the positive battery terminal.	The lever moves from the "LOCK" position to the "UNLOCK" position.

Q: Is the trunk lid actuator normal?

YES : Go to Step 6.
NO : Replace the trunk lid latch assembly.

STEP 6. Check the ground circuit to the trunk lid lock actuator. Measure the resistance at trunk lid lock actuator connector F-12.

(1) Disconnect trunk lid lock actuator connector F-12 and measure the resistance available at the wiring harness side of the connector.
(2) Measure the resistance value between terminal 2 and ground.
- The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 8.
NO : Go to Step 7.

STEP 7. Check the wiring harness between trunk lid lock actuator connector F-12 (terminal 2) and ground.

NOTE: Also check intermediate connector F-23 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector F-23 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between trunk lid lock actuator connector F-12 (terminal 2) and ground in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the trunk lid opener function works normally.

STEP 8. Check the wiring harness between trunk lid lock actuator connector F-12 (terminal 3) and ETACS-ECU connector C-311 (terminal 1).

NOTE: Also check intermediate connectors D-14, F-23 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors D-14, F-23 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between trunk lid lock actuator connector F-12 (terminal 3) and ETACS-ECU connector C-311 (terminal 1) in good condition?

YES : Replace the ETACS-ECU. When the ETACS-ECU is replaced, register the keyless ID. Refer to P.42C-98. All the doors can be locked or unlocked by means of the transmitter.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the trunk lid opener function works normally.

INPUT SIGNAL REFERENCE TABLE

M1427504700021

Trouble symptom	Reference page
Signals from transmitter switches are not received.	P.42C-96

INPUT SIGNAL PROCEDURES

Signals from transmitter switches are not received.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

Input signal from the keyless entry transmitter is used to operate the keyless entry system. If the signal is abnormal, the keyless entry system will not work normally.

TROUBLESHOOTING HINTS

- Battery discharged in the transmitter
- Malfunction of the transmitter
- Malfunction of WCM

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

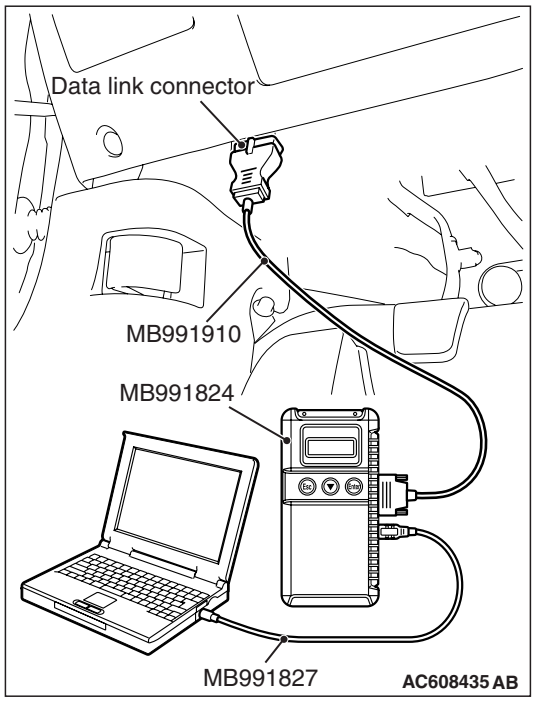
STEP 1. Using scan tool MB991958, read the diagnostic trouble code.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.42C-6."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the WCM related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the WCM. Refer to Diagnostic Trouble Code Chart P.42C-14.
NO : Go to Step 2.



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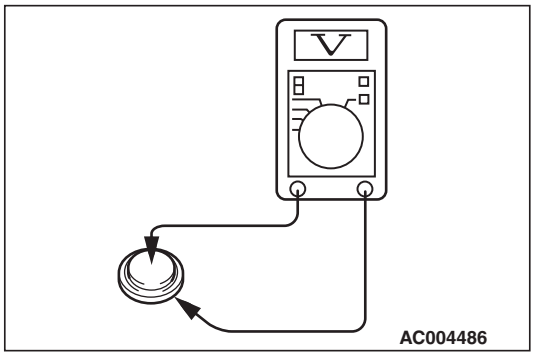

AC004486

STEP 2. Check the transmitter battery.

Measure the voltage of the transmitter battery.

- The value should be approximately 2.5 - 3.2 volts.

Q: Is the measured voltage approximately 2.5 - 3.2 volts?

YES : Go to Step 3.

NO : Replace the battery. If the transmitter can be registered normally, and operates normally, it indicates that the transmitter is sending normal signal to the WCM.

STEP 3. Register the keyless ID using a known-good transmitter of the same type again, and check the trouble symptom.

(1) Register a known-good transmitter of the same type.

(2) Check if the signals from the transmitter switches are received.

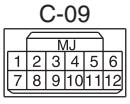
Q: Can the transmitter be registered correctly?

YES : Replace the original transmitter with a new one.

NO : Replace the WCM (Including when the new transmitter cannot be registered). Replace WCM and register the ID codes (Refer to P.42C-98). If the transmitter works normally, the input signal from the transmitter should be normal.

CHECK AT ECU TERMINALS

M1427500900034



AC507349AE

Terminal No.	Check items	Check conditions	Normal conditions
1 –5	–	–	–
6	Power supply (Battery)	Always	Battery voltage
7	Ground	Always	0 V
8	–	–	–
9	Power supply (Ignition switch: IG1)	Ignition switch: ON	Battery voltage
10	CAN L	–	–
11	CAN H	–	–

ON-VEHICLE SERVICE

ID CODES REGISTRATION PROCEDURE

M1427506300030

REGISTRATION USING SCAN TOOL MB991958 (M.U.T.-III SUB ASSEMBLY)

Required Special Tools:

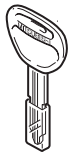
- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827 M.U.T.-III USB Cable
  - MB991910 M.U.T.-III Main Harness A

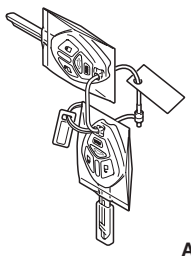
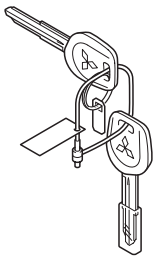
The ID codes necessary for the engine immobilizer system, the keyless entry system and the TPMS can be registered using the scan tool MB991958 (M.U.T.-III sub assembly). KOS and keyless operation key are indicated as F.A.S.T and F.A.S.T.-key respectively in the scan tool MB991958 (M.U.T.-III sub assembly) screen.

⚠ CAUTION

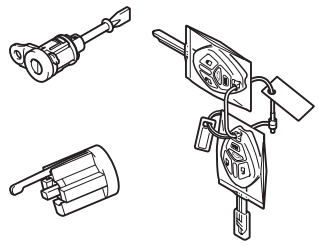
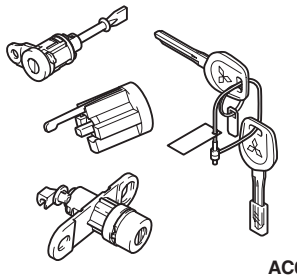
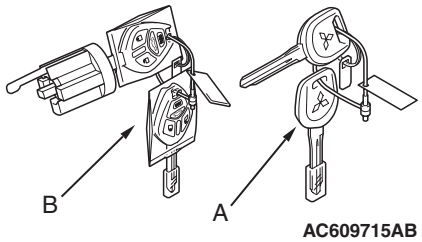
If the ignition key with transmitter is added or replaced, register the key (key ID), and then register the keyless ID again.

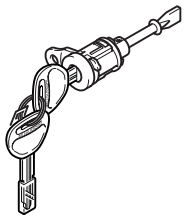
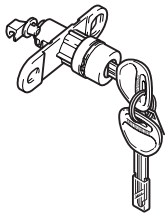
SUPPLY UNIT LIST FOR INDIVIDUAL KEY

Ignition key (without transmitter)	Ignition key (with transmitter)	*NOTE: Blank key (It is the key that comes with the door service key set and the trunk lid service key set. It can only be used for locking and unlocking, and it cannot start the engine.)*
AC502117	AC609713	BLANK KEY  AC607881AB

Immobi and keyless key assembly	Immobilizer key assembly
 AC611353	 AC611354

KEY SUPPLY UNIT LIST FOR OTHER THAN INDIVIDUAL KEY

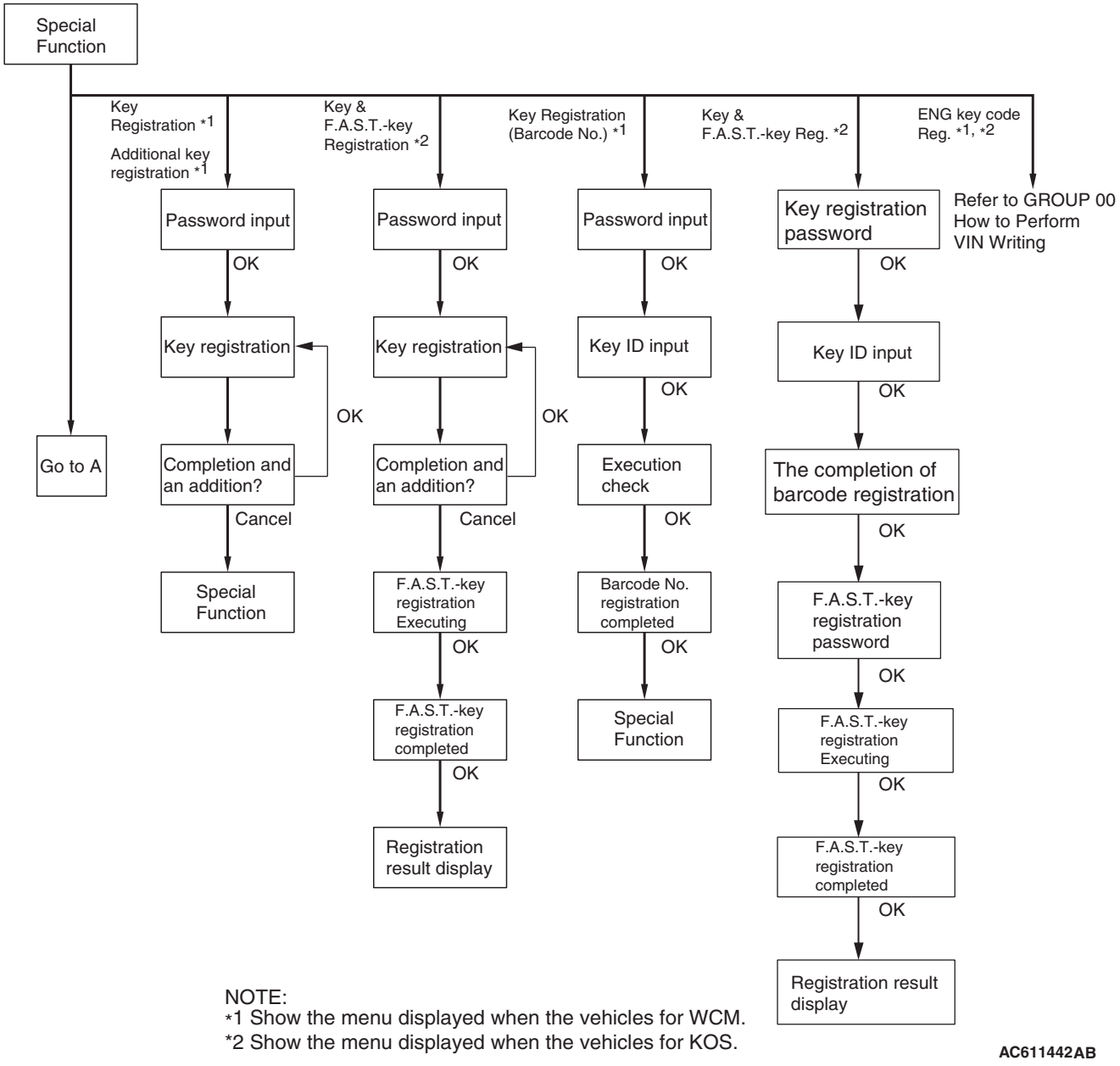
Full service key set <Vehicles with keyless entry system>	Full service key set <Vehicles without keyless entry system>	Handle lock service key set (A:Without transmitter, B:With transmitter)
 AC609714	 AC610065	 AC609715AB

Door service key set (LH), Door service key set (RH) <Vehicles without keyless entry system>	Trunk lid service key set <Vehicles without keyless entry system>
 AC610062	 AC610063

NOTE:

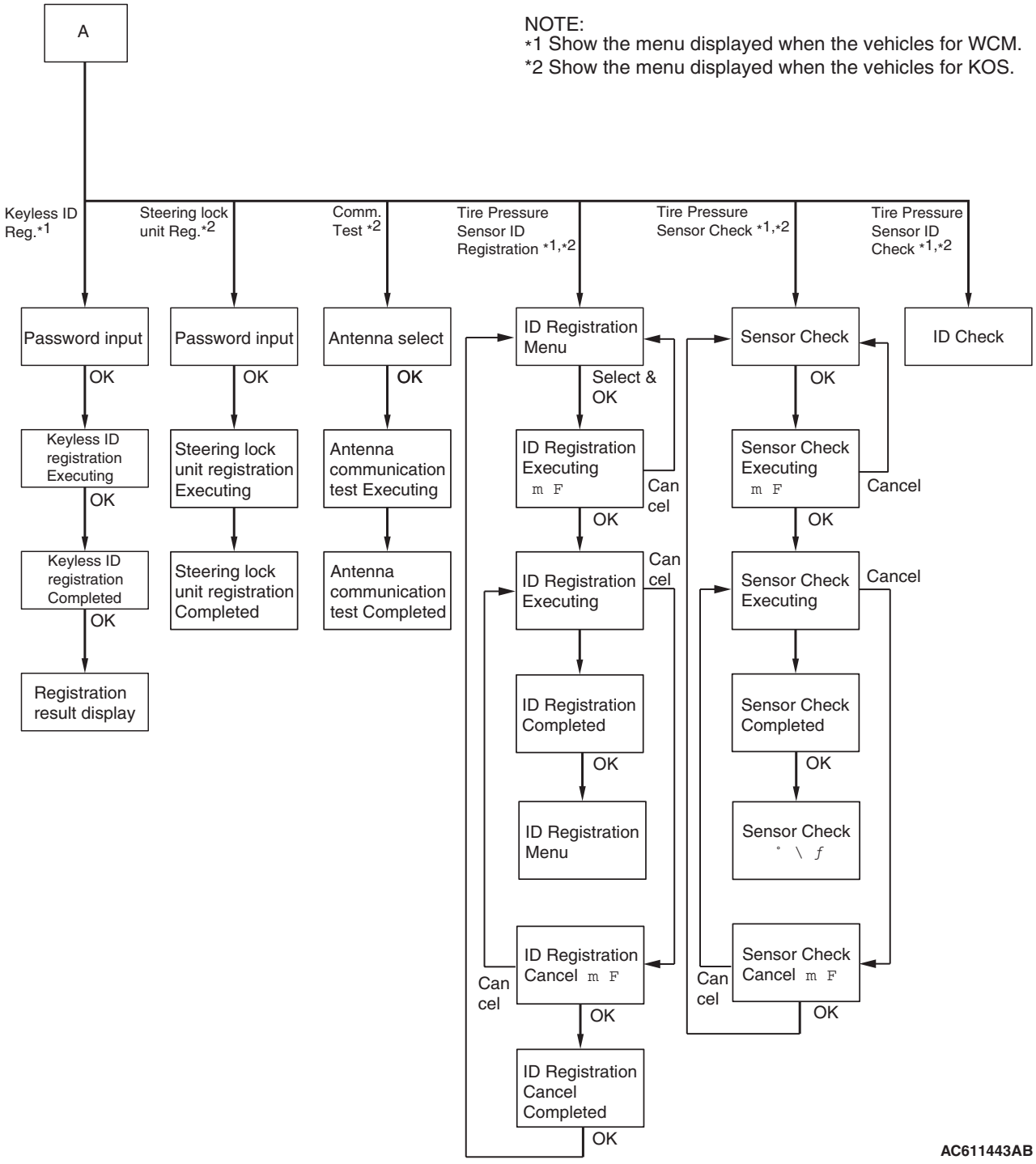
- *When re-registering the key (key ID and keyless ID), all the keys (key ID and keyless ID) registered before must be re-registered because all of them will be erased.*
- *After registering the keys, make sure that the engine is started normally with all of the keys registered.*

Screen flow of scan tool MB991958 (M.U.T.-III sub assembly)



NOTE:
*1 Show the menu displayed when the vehicles for WCM.
*2 Show the menu displayed when the vehicles for KOS.

AC611442AB



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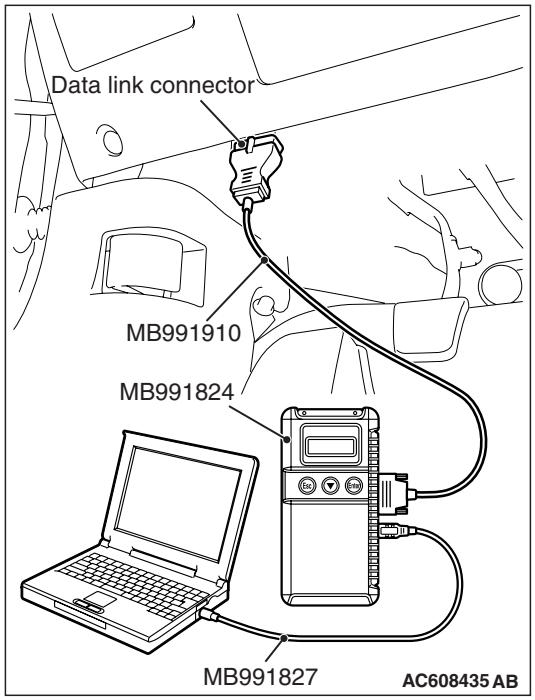


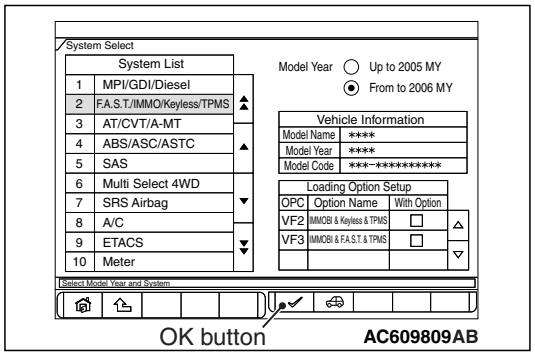
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

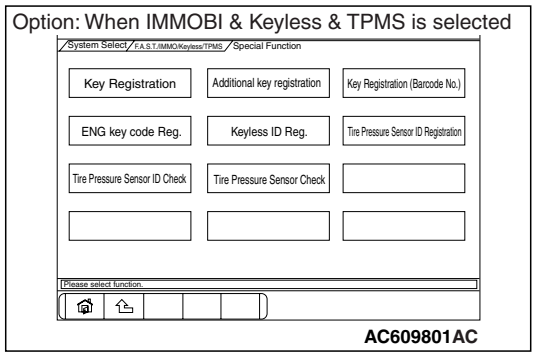
Connect the scan tool to the 16-pin data link connector as follows.

NOTE: For details on how to use the scan tool, refer to the "M.U.T.-III User's Manual."

1. Start the scan tool MB991958 system on the personal computer and turn the ignition switch to the "ON" position.



2. Select "F.A.S.T./IMMO/Keyless/TPMS" button from the "System Select" screen. Then, select the applicable option code item and push the OK button.
3. Select "Special Function" on the next screen.



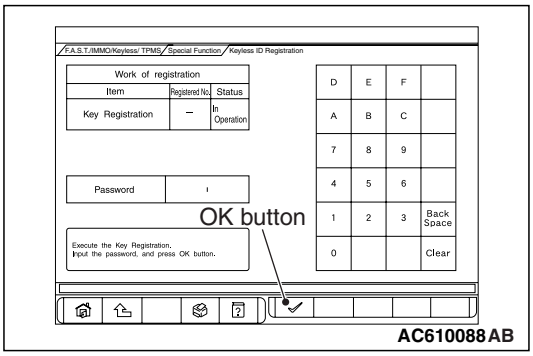
4. Select the button of the operation to be performed from the "Special Function" screen.
   - "Key Registration": When the ignition key is replaced or added as a single unit and/or the WCM replaced.
   - "Additional key registration": When the ignition key is added as a single unit.
   - "Key Registration (Barcode No.)": When the ignition key is replaced by the full service key set, the handle lock service key set, immobi and keyless key assembly or immobilizer key assembly is replaced by the piece.
   - "ENG Key Code Reg.": When the engine control module is replaced.
   - "Keyless ID Reg.": When the ignition key is replaced or added as a single unit and the immobi and keyless key assembly.
   - "Tire Pressure Sensor ID Registration": When the TPMS transmitter is replaced and/or the WCM is replaced.
   - "Tire Pressure Sensor Check": When the tire pressure sensor data is checked.
   - "Tire Pressure Sensor ID Check": When the tire pressure sensor ID is checked.

TSB Revision

NOTE: For "ENG Key Code Reg," refer to GROUP 00 –Precautions before Service P.00-26.

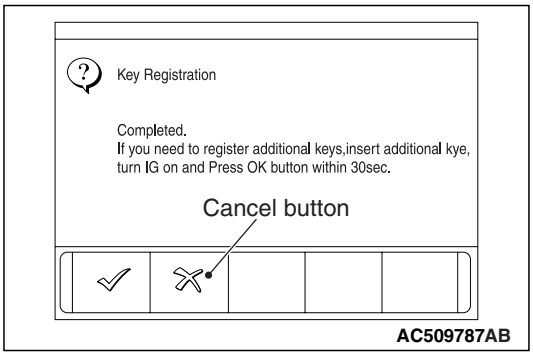
5. After operation check, turn the ignition switch to the "LOCK" (OFF) position.
6. Remove the scan tool MB991958.

"Key Registration"/"Additional key registration" METHOD



1. When "Key registration" or "Additional key registration" screen is displayed, enter the password for the key registration and press the OK button. Then, "Executing!" is displayed and the registration process starts.

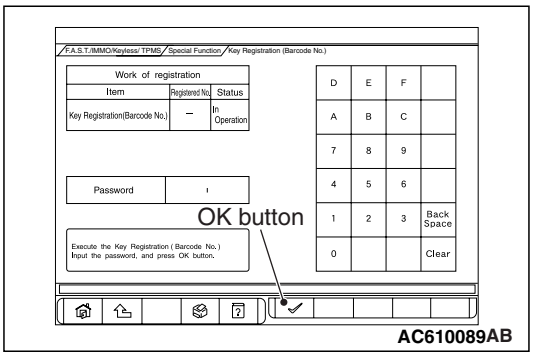
   NOTE:
   - *If the wrong password is entered consecutively 5 times, the password entry for the key registration will be disabled for 16 minutes.*
   - *The key registration cannot be cancelled during the operation.*


Key Registration
Completed.
If you need to register additional keys,insert additional kye, turn IG on and Press OK button within 30sec.
Cancel button
AC509787AB

2. When the key registration is completed, "Completed" is displayed. To register the next key, follow the message on the screen and press the OK button. Then, "Executing!" is displayed again and the registration process for the next key starts. To finish the key registration, press the cancel button.

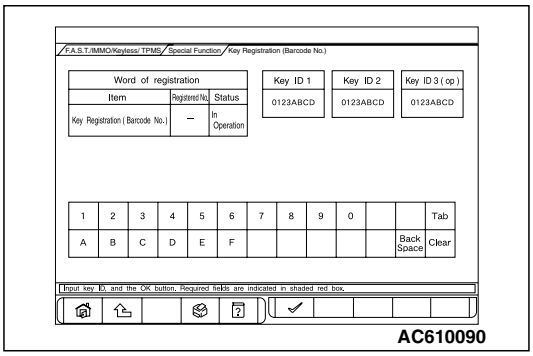
   NOTE:
   - *In order to register another key consecutively after registering the first key, the ignition switch must be turned to the ON position with the second key within 30 seconds after turning it to the "LOCK" (OFF) position with the first key.*
   - *Up to eight keys can be registered.*
   - *When the key cannot be registered using scan tool MB991958, refer to Inspection Procedure 2 "The ignition key cannot be registered using scan tool P.42C-76.*

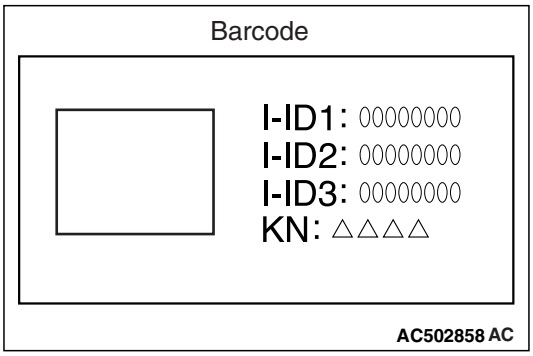
"Key Registration (Barcode No.)" METHOD



1. When "Key Registration (Barcode No.)" screen is displayed, enter the password for the key registration and press the OK button.

   NOTE: If the wrong password is entered consecutively 5 times, the password entry for the key registration will be disabled for 16 minutes.

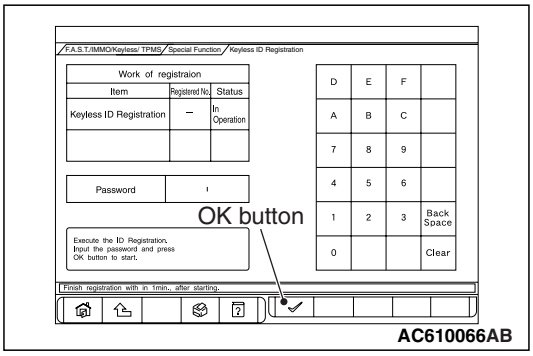

F.A.S.T./IMMO/Keyless/ TPMS/ Special Function/ Key Registration (Barcode No.)
Word of registration
Item
Registered No.
Status
Key Registration (Barcode No.)
–
In Operation
Key ID 1
0123ABCD
Key ID 2
0123ABCD
Key ID 3 (op)
0123ABCD
1 2 3 4 5 6 7 8 9 0 Tab
A B C D E F Back Space Clear
Input key ID, and the OK button. Required fields are indicated in shaded red box.
AC610090



2. Follow the message on the screen to enter the bar code No., and then press the OK button.
3. When "Do you want to start registration?" is displayed, press the OK button to start the registration, or press the Cancel button to cancel the registration.
4. "Key Registration was completed" is displayed. Press the OK button to finish the registration.

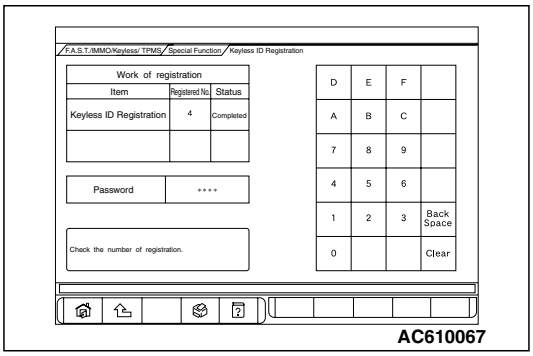
   NOTE: When the key cannot be registered using scan tool MB991958, refer to Inspection Procedure 2 "The ignition key cannot be registered using scan tool *P.42C-76**.*

"Keyless ID Reg." METHOD



1. On the "Keyless ID Reg." screen, enter the password and press the OK button.
2. Register within 1 minute and send the programming packet* to register the keyless ID. To register multiple keys, register the next key within 1 minute from the registration operation of previous key. Complete the registration of necessary keys, then press the OK button to finish the keyless ID registration.

   NOTE:
   - *Up to eight ignition keys can be registered.*
   - **: Programming packet sending procedure*
     Complete the following steps 1 to 3 within four seconds.
     1. *Press and hold both the lock and the unlock switch for 1 second or longer.*
     2. *Release both the lock and the unlock switch for 0.5 second or longer.*
     3. *Press the unlock switch.*
3. Push the OK button after "Keyless ID Registration was finished." is displayed.



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4. Check number of the keyless IDs registered.

"Tire Pressure Sensor ID Registration" METHOD

1. Select "4tires ID Reg. (Change tire PRS.)" and start the tire pressure sensor ID registration.

⚠ CAUTION

Register all tire pressure sensor IDs within twenty minutes.

2. "4 SNSR ID Registration Do you want to start? Note Finish ID Registration within 20 minutes." is displayed. Then, press "OK."

   NOTE: If the ID code registration is not finished within 20 minutes, all the ID codes registered in the TPMS transmitter before will be erased. For this reason, the ID codes need to be registered again.

3. Decrease the tire pressure to 174 kPa (25.2 psi) or less, and register the TPMS transmitter ID code of each wheel to WCM.

   NOTE:
   - *If the ID code registration is not finished within 20 minutes, all the ID codes registered in the TPMS transmitter before will be erased. For this reason, the ID codes need to be registered again.*
   - *On completion of the TPMS transmitter ID code registration, the TPMS transmitter ID code is displayed on the M.U.T.-III screen.*
   - *It may take approximately one minute for the ID code to be displayed on the M.U.T.-III screen after the tire pressure is reduced.*
   - *If the ID code is not displayed, reduce the tire pressure another 20 kPa (2.9 psi) or more. If the ID code is not displayed yet, rotate the tire to displace the TPMS transmitter, and reduce the tire pressure 20 kPa (2.9 psi) or more again.*
   - *You can start out the following operations from any TPMS transmitter. The tire pressure sensor ID registration has no order.*
   - *M.U.T.-III cannot identify which registered ID code is used for each wheel. For this reason, write down the ID code for each wheel when the ID code is displayed on the scan tool during ID code registration.*
   - *If the ID code cannot be registered for all the four wheels, the WCM may be faulty, thus replace the WCM.*

- *If the ID code can be registered for one wheel or more, the TPMS transmitter in which the code cannot be registered may be faulty, thus replace that TPMS transmitter.*

4. "4 SNSR ID Registration Completed." is displayed. Then, select "OK."

   NOTE: The TPMS indicator illuminates for tire pressure alarm.
5. After one minute or more has passed, correct the tire pressure for all wheels.
6. Using the normal signal reception check function, check that "YES" is displayed for each tire. When "NO" is displayed, drive the vehicle for approximately 5 minutes, check the display again. If "NO" is still displayed, register the ID code again.

"Tire Pressure Sensor Check" METHOD

1. Write down the tire pressure for all wheels.

   NOTE: The display at this time is the data received most recently.
2. Perform the following procedures for every four wheel in order, check the tire pressure of each wheel to identify the wheel.
   (1) Change the pressure of tire to be checked for 20 kPa (2.9 psi) or more (The tire pressure can either be decreased or increased).
   (2) Check the data list screen to determine which tire number corresponds to the wheel whose tire pressure has changed.

   NOTE:
   - *It may take approximately one minute that the data of tire pressure change is displayed on the M.U.T.-III screen.*
   - *If the data of tire pressure change is not displayed on the M.U.T.-III screen, the most possible cause is that the radio wave sent from the TPMS transmitter cannot be received. In this case, the radio wave may be received by performing the procedures from (1) again after turning the tire to change the TPMS transmitter position. If the tire pressure change is still not displayed on the M.U.T.-III screen, the TPMS transmitter in which the ID code is not registered may be installed, or the TPMS transmitter may be faulty. Therefore, perform ID code registration or replace the TPMS transmitter according to the instructions of troubleshooting for DTCs. (At this time, do not register the ID codes or replace the TPMS transmitter.)*
3. After checking by the tire pressure change, adjust the checked tire pressure to the proper value.

"Tire Pressure Sensor ID Check" METHOD

Check the TPMS transmitter IDs on the personal computer display.

FROM SCAN TOOL MB991958 DIAGNOSIS SCREEN

You can check the TPMS transmitter ID on the diagnosis screen as described below.

1. Operate scan tool MB991958 as follows:
   - Press "Special function" button on the diagnosis screen.
   - Select "Tire Pressure Sensor ID Check" from the "Special function" menu.
2. Check the TPMS transmitter IDs on the personal computer display.

REGISTRATION NOT USING SCAN TOOL MB991958 (M.U.T.-III SUB ASSEMBLY) <USA ONLY>

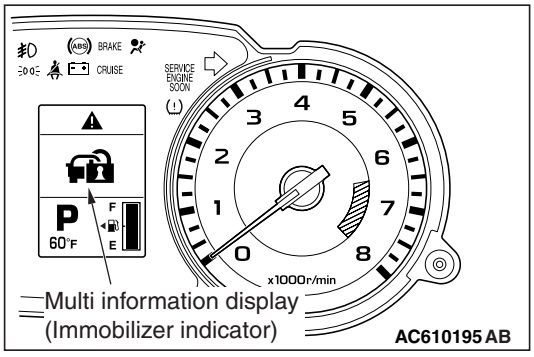
When the ignition key is lost or additional keys are requested, the ignition key must be used to register key ID.

⚠ CAUTION

Two ignition keys that have been registered are needed.

1. Turn the ignition switch to the "ON" position using the registered ignition key and keep it there for 5 seconds.
2. Turn the ignition switch to the "LOCK" (OFF) position, and remove the registered ignition key.
3. Within 30 seconds after the ignition key is removed, insert the other registered ignition key that has already been registered and turn the ignition switch to the "ON" position.
4. The immobilizer indicator starts flashing in approximately 10 seconds after the ignition switch is turned to the "ON" position.
5. When the immobilizer indicator starts flashing, turn the ignition switch to the "LOCK" (OFF) position and remove the ignition key.

   NOTE: When an error occurs while the immobilizer indicator is flashing, the immobilizer indicator extinguishes.
6. Within 30 seconds after the immobilizer indicator flashes in Step 5, insert the ignition key to be added and turn the ignition switch to the "ON" position.
7. When registering another ignition key, repeat the procedure from the beginning.



NOTE:

<When the additional ignition key cannot be registered>

- *When the immobilizer indicator is not illuminated during registration*
- *When the immobilizer indicator does not change in 3 seconds after carrying out step 6*

<When the additional registeration of the ignition key terminates automatically>

- *When 30 seconds have passed before inserting the ignition key in Step 3 after the ignition key is removed in Step 2.*

- *When 30 seconds have passed after the immobilizer indicator flashed*

KEYLESS ID NOT USING SCAN TOOL MB991958 (M.U.T.-III SUB ASSEMBLY) <USA ONLY>

When the keyless ID code is already registered in the transmitter, the keyless ID code can be registered without using the scan tool MB991958 (M.U.T.-III sub assembly) according to the following procedures.

1. Prepare all the transmitters for ID code registration before starting the operation.
2. Press the unlock button of the transmitter in which the keyless ID code is registered.
3. After pressing the unlock button, press the lock button within 4 seconds to less than 10 seconds.
4. Release the lock button within 10 seconds after pressing it.
5. Release the unlock button 0.5 seconds after releasing the lock button.

   NOTE: The WCM erases the keyless ID codes of the transmitters other than the operated transmitter.

   NOTE: The WCM sets the transmitter registration number to 1.
6. When the operations from Step 1 to Step 4 are completed, the door can be locked or unlocked, and the mode shifts to the customer-programming mode. Within 1 minute after the mode shifted to the customer-programming mode, the signal for registration is transmitted from the transmitter to be added.

   NOTE: How to transmit the transmitter registration signal

   1. *Press the lock button and the unlock button of the transmitter to be added for 1 second or more simultaneously.*
   2. *Release the lock button and the unlock button simultaneously.*
   3. *After releasing the lock button and unlock button simultaneously, when 0.5 seconds or more has elapsed, press the unlock button.*

   NOTE: The WCM receives the registration signal, and stores the keyless ID code of the transmitter.

   NOTE: The WCM adds the transmitter registration number by 1.
7. When the operation of Step 5 is finished, the door can be locked or unlocked to notify that the transmitter registration is completed.
8. To register another transmitter, repeat the operation of Step 5 within 1 minute after the previous transmitter registration.
9. The customer-programming mode is terminated by any of the following conditions.

- When the registration of 8 transmitters are completed

- When 1 minute has elapsed without registration after the shift to the customer-programming mode
- when 1 minute has elapsed after previous transmitter registration
- When the engine speed is more than 200 rpm
- The EEPROM abnormality occurs [When the EEPROM abnormality occurs during the transmitter registration, delete all the transmitters stored (including the transmitters used for the shift to the customer-programming mode), and finish the customer-programming mode.]

TPMS TRANSMITTER CHECK

M1427509000027

Refer to ID codes registration procedure P.42B-183.

TPMS TRANSMITTER ID CHECK

M1427509100024

Refer to ID codes registration procedure P.42B-183.

KEYLESS ENTRY SYSTEM CHECK

M1427505600050

Check the keyless entry system as described below. If it does not work, perform troubleshooting. Refer to P.42C-74.

- Operate the transmitter to check that the doors can be locked and unlocked.
- Operate the transmitter to check that the answerback function works in response to doors locking/unlocking.

  NOTE: The hazard answerback setting can be changed using the customization function. Confirm which setting is activated before performing these checks. Refer to P.42C-110.

INSPECTION OF KEYLESS ENTRY TIMER LOCK FUNCTION

M1427505800032

Attempt to unlock the doors by using the transmitter. If the doors are not locked within 30 seconds, carry out diagnosis. Note that the doors will not be locked if the ignition key is inserted within the 30-second period, or the doors are opened. Refer to P.42C-74.

NOTE: The operation time of the keyless entry timer lock function can be set using the customization function. Confirm the operation time before performing the diagnosis. Refer to P.42C-110.

CONFIGURATION FUNCTION

M1427504500038

Using the scan tool, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Hazard answer back	Adjustment of the number of keyless hazard warning light answer back flashes	Lock:1, Unlock:2	LOCK: Flashes once, UNLOCK: Flashes twice (default)
		Lock:1, Unlock:0	LOCK: Flashes once, UNLOCK: No flash
		Lock:0, Unlock:2	LOCK: No flash, UNLOCK: Flash twice
		Lock:2, Unlock:1	LOCK: Flash twice, UNLOCK: Flash once
		Lock:2, Unlock:0	LOCK: Flash twice, UNLOCK: No flash
		Lock:0, Unlock:1	LOCK: No flash, UNLOCK: Flash once
		Lock:0, Unlock:0	No function
Dome light delay timer with door	Adjustment of interior light delay shutdown time	0sec	0 second (no delay shutdown time) (default <Vehicles without central door locking system>)
		7.5sec	7.5 seconds
		15sec	15 seconds
		30sec	30 seconds (default <Vehicles with central door locking system>)
		60sec	60 seconds
		120sec	120 seconds
		180sec	180 seconds
Door unlock mode	Door lock system <Vehicles with central door locking system>	All doors unlock	All the doors are unlocked when the driver's side door is unlocked.
		Dr door unlock	Only the driver's side door is unlocked when the driver's side door is unlocked. (default)
Auto door unlock by P position	Auto door unlock by P position function <Vehicles with central door locking system>	Disable	No function (default)
		Always enabled	Always with function
Duration of horn chirp	Horn sounding time during horn answer back	Short	0.01 second (default)
		Long	0.02 second
Horn chirp by keyless	Horn chirp by keyless entry system	Not sound horn	No horn answerback function
		Lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed once.
		W lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed twice. (default)

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Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Timer lock timer	Timer lock period adjustment	30sec	30 seconds (default)
		60sec	60 seconds
		120sec	120 seconds
		180sec	180 seconds
Panic alarm switch	With/without panic alarm function	Disable	No function
		Enable	With function (default)

WCM

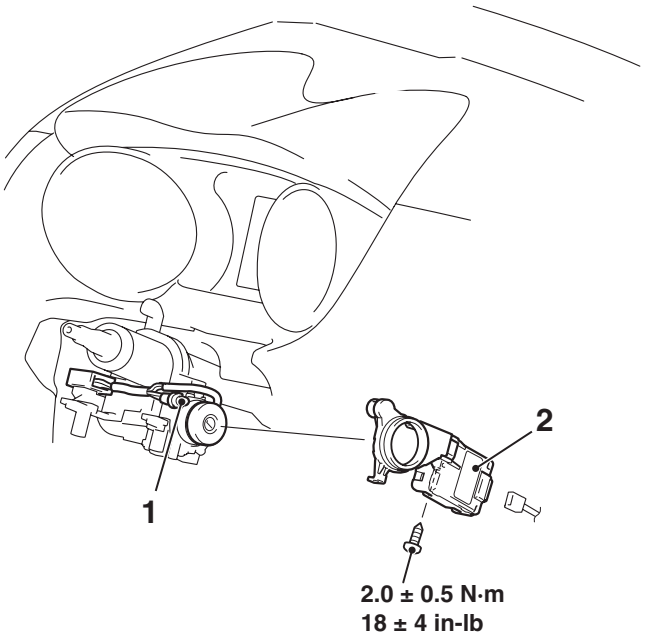
REMOVAL AND INSTALLATION

M1427500800037

⚠ CAUTION

- **To remove the driver's airbag module, refer to GROUP 52B –Service Precautions P.52B-24 and Air Bag Module(s) and Clock Spring P.52B-367.**
- **When WCM has been replaced, all key ID codes should be registered, referring to the ID code registration necessity judgment table P.42C-8.**

Pre-removal operation	Post-installation operation
• Instrument panel cover lower removal (Refer to GROUP 52A –Instrument Lower Panel P.52A-7). • Steering column cover removal (Refer to GROUP 52A – Instrument Panel Assembly P.52A-2). • Clock spring column switch assembly removal [Refer to GROUP 37 –Steering Shaft P.37-25 or GROUP 52B –Air Bag Module(s) and Clock Spring P.52B-367].	• Clock spring column switch assembly installation [Refer to GROUP 37 –Steering Shaft P.37-25 or GROUP 52B –Air Bag Module(s) and Clock Spring P.52B-367]. • Steering column cover installation (Refer to GROUP 52A – Instrument Panel Assembly P.52A-2). • Instrument panel cover lower installation (Refer to GROUP 52A –Instrument Lower Panel P.52A-7).



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Removal steps

1. Key ring illumination light

>>**A**<< 2. WCM

INSTALLATION SERVICE POINT

>>A<< WCM INSTALLATION

Check that the top claw of WCM is fixed securely to the boss of steering lock and the antenna is not floated on the key cylinder.

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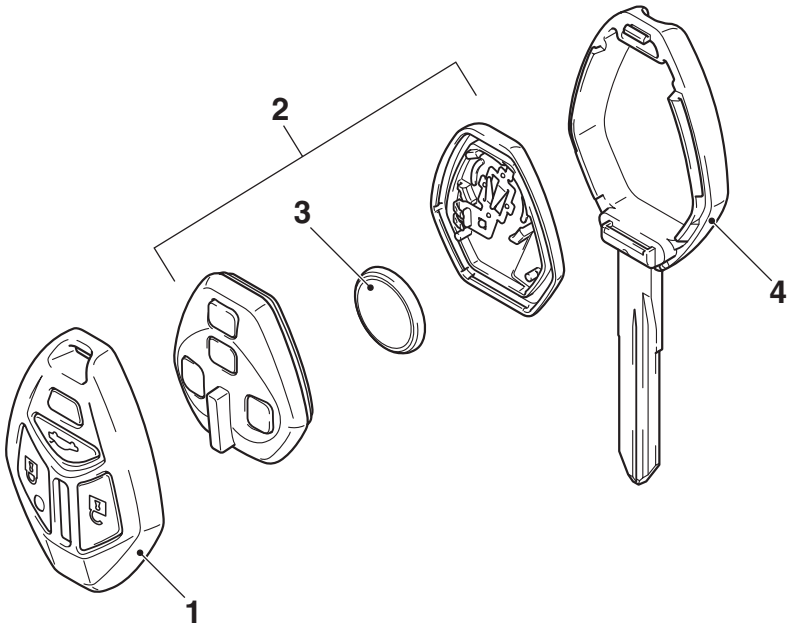
TRANSMITTER

DISASSEMBLY AND ASSEMBLY

M1427506100036

Post-installation operation
- Transmitter operation check



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Disassembly steps

<<A>>
1. Upper cover
2. Transmitter assembly

Disassembly steps (Continued)

<<B>> >>A<<
3. Battery
4. Master key

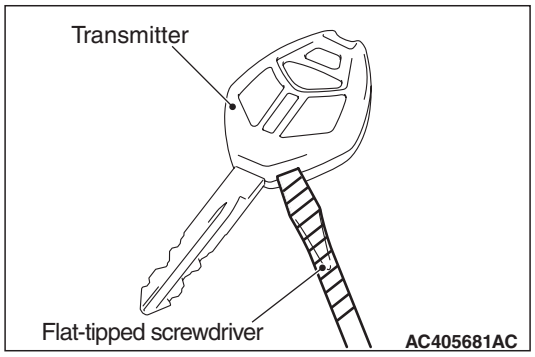
DISASSEMBLY SERVICE POINTS

<<A>> UPPER COVER REMOVAL

⚠ CAUTION

To prevent damage to the transmitter, wrap a flat-tipped screwdriver with protective tape before prying.

Insert a flat-tipped screwdriver in the area shown, and remove the upper cover by prying it with the screwdriver.



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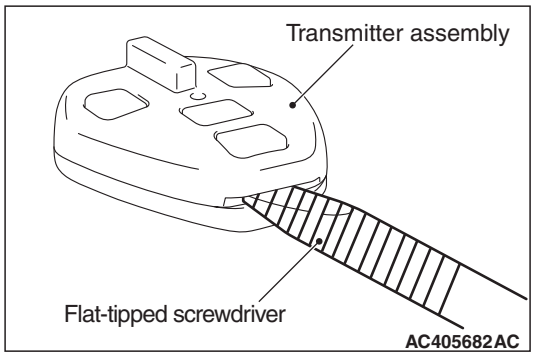
TSB Revision

<<B>> BATTERY REMOVAL

⚠ CAUTION

- **Do not allow water or dust to enter the inside of the transmitter assembly when it is open. Also, do not touch the precision electronic device.**
- **To prevent damage to the transmitter assembly, wrap a flat-tipped screwdriver with protective tape before prying.**



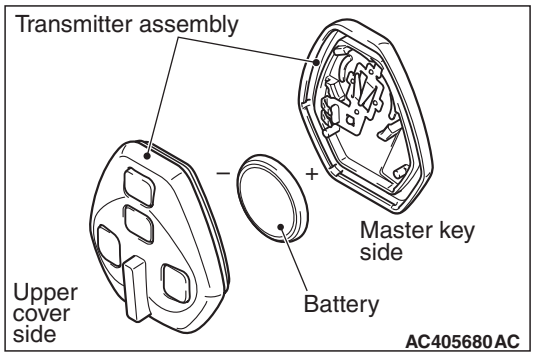
Insert a flat-tipped screwdriver in the area shown, and remove the battery by prying it with the screwdriver.

ASSEMBLY SERVICE POINT

>>A<< BATTERY INSTALLATION

⚠ CAUTION

Do not allow water or dust to enter the inside of the transmitter assembly when it is open. Also, do not touch the precision electronic device.



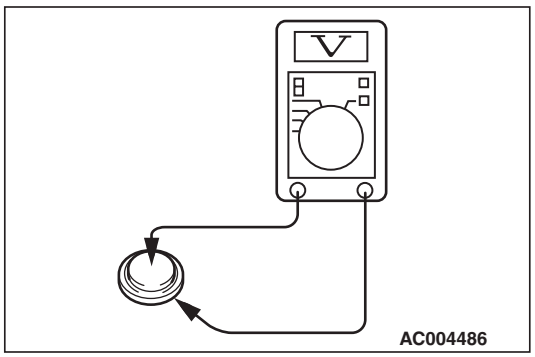
Install a new battery to the transmitter assembly with its (+) side facing towards the master key side.

Battery required for replacement: Coin type battery CR1620

INSPECTION

M1427506200022

TRANSMITTER BATTERY CHECK



Measure the voltage of the battery. If the voltage of the battery is lower than the standard value, replace the battery.

Standard value:2.5 –3.2 V

TPMS TRANSMITTER

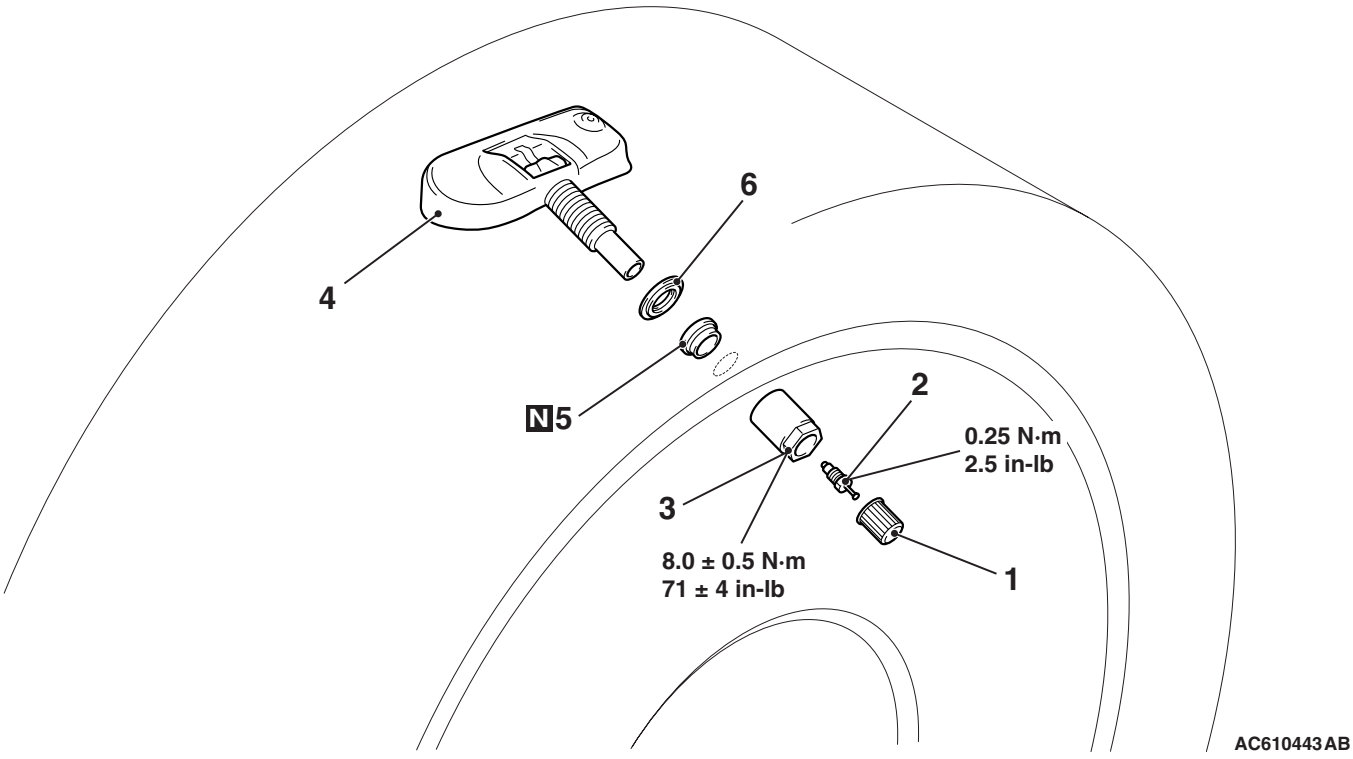
REMOVAL AND INSTALLATION

M1427509300017

⚠ CAUTION

- **Do not vary the angle of valve except at mounting on the rim. If varying the angle over and over, it may cause breakage of antenna plate resulting in the failure of TPMS transmitter.**
- **Ensure valve cap is always in place except when adjusting tire pressure.**
- **If the valve core and valve cap are replaced, use a genuine replacement part. The valve core is similar to a conventional one, but uses nickel plating to avoid corrosion.**
- **Replace the seal and seal washer with a new one every five years or when the tire is replaced.**
- **Do not drop the TPMS transmitter from height greater than 1 meter (3.3 feet).**
- **Do not expose the TPMS transmitter to extraneous magnetic fields.**
- **TPMS transmitter should not be stored at temperatures above 80° C (176° F).**
- **TPMS transmitter should not be exposed to temperatures above 100° C (212° F).**
- **If the TPMS transmitter is replaced, execute "Tire Pressure Sensor ID Registration" on scan tool MB991958 "Special Function."**
- **Be careful not to damage the TPMS transmitter.**

Pre-removal Operation	Post-installation Operation
• Wheel and Tire Removal	• Wheel and Tire Installation • Tire Pressure Sensor ID Registration If a new TPMS transmitter is installed (Refer to P.42C-8). • After the tire pressure sensor ID registration, check that the TPMS warning light does not illuminate or flash.



Removal steps

<<A>> 1. Cap
<<A>> 2. Valve core

<<A>>

Removal steps (Continued)

3. Nut
   - Let TPMS transmitter fall into tire

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Removal steps (Continued)
- Tire bead

<<B>> 4. TPMS transmitter
<<C>> 5. Seal
<<C>> 6. Seal washer

Installation steps

>>A<< 6. Seal washer
>>A<< 5. Seal
>>A<< 4. TPMS transmitter
>>A<< 3. Nut
>>B<< • Tire bead mounting
2. Valve core
>>C<< • Tire pressure inflation
>>C<< • Valve nut retightening
1. Cap

REMOVAL SERVICE POINTS

<<A>> CAP/VALVE CORE/NUT REMOVAL

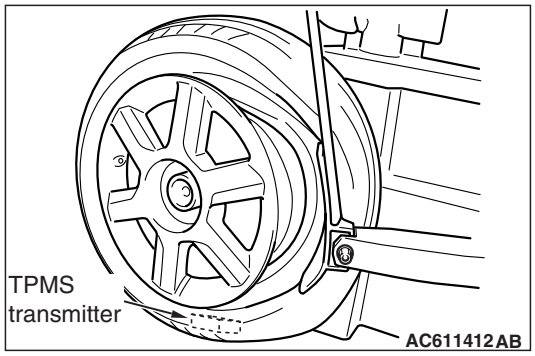
⚠ CAUTION
Ensure cap is always in place except when adjusting tire pressure.

1. Remove the cap and valve core to deflate the tire.
2. Once tire pressure is released, remove nut and let TPMS transmitter fall into tire.

<<B>> TPMS TRANSMITTER REMOVAL

⚠ CAUTION
Be careful not to damage the TPMS transmitter.

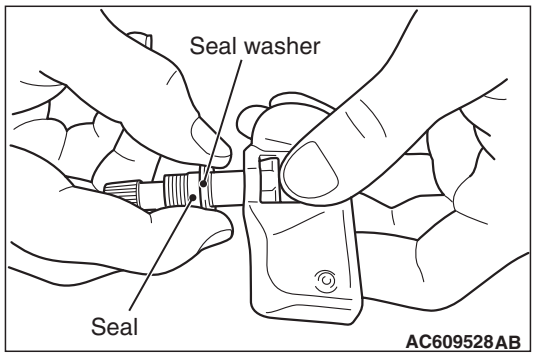
1. Place on tire changing machine and break both tire beads ensuring that the TPMS transmitter remains in the bottom of the tire.
2. Lubricate tire well and remove outer side of the tire.
3. Reach inside the tire and remove the TPMS transmitter.
4. Remove tire from rim using proper tire changing equipment procedures.



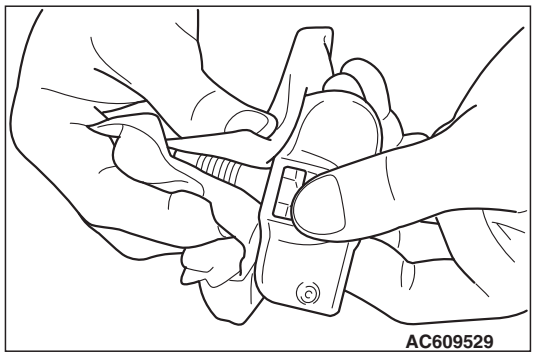
<<C>> SEAL/SEAL WASHER REMOVAL

⚠ CAUTION

- **Do not vary the angle of valve except at mounting on the rim. If varying the angle over and over, it may cause breakage of antenna plate resulting in the failure of TPMS transmitter.**
- **Use a soft tool to remove the grommet and washer to prevent scratching the valve of the TPMS transmitter.**



1. Hold the TPMS transmitter and the seal washer, then extract it, this also extracts the seal. Take care to not damage the valve thread.



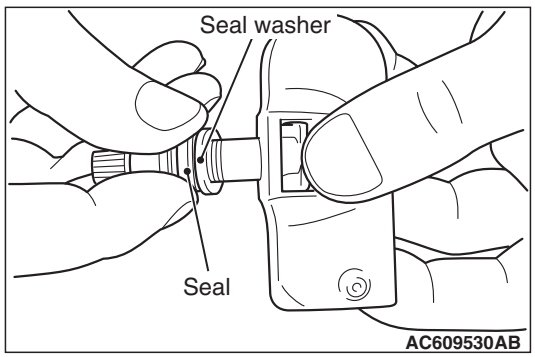
2. Clean the TPMS transmitter and the valve stem holding the valve as shown. Take care to support the rear of the valve with a thumb so that there is no movement of the stem.

INSTALLATION SERVICE POINTS

>>A<< SEAL/SEAL WASHER/TPMS TRANSMITTER/NUT INSTALLATION

⚠ CAUTION

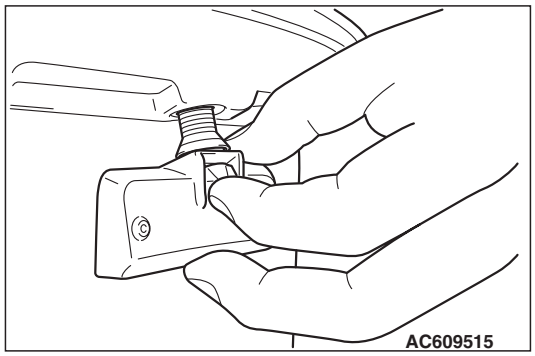
When installing a new seal and seal washer, make sure to support the valve stem base with a thumb so that there is no movement of the stem. Otherwise, the stem may protrude resulting in the breakage of antenna plate.



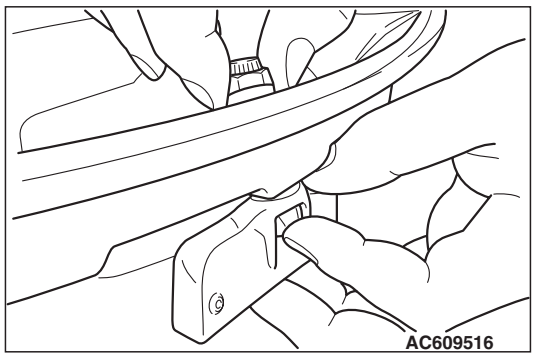
1. Insert these up to the base of the TPMS transmitter, making sure to secure the valve base with a thumb, as shown. Wipe the seal and threading.

⚠ CAUTION

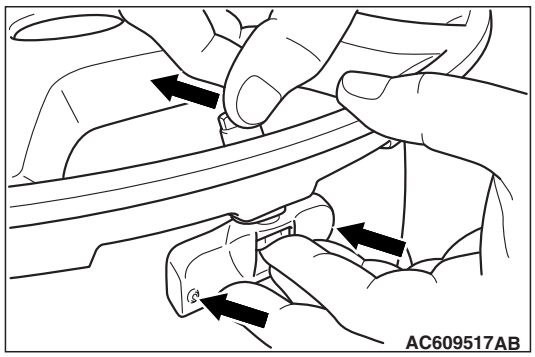
- **Visually check that TPMS transmitter is not deformed or damaged.**
- **When installing the TPMS transmitter, be sure the rim, seal valve and nut are clean.**
- **Ensure the grommet is located inside the valve hole before installing the nut.**
- **While installing the nut, push the TPMS transmitter to maintain the lower lip of the transmitter case is in contact with the rim without clearance.**
- **While installing the valve nut, ensure the tool is kept aligned to the valve and the valve hole.**
- **After installing the nut, check that the seal is compressed and seal washer is bend.**


AC609515

2. Install the valve, in the valve hole, without modifying the angle of the stem (retain position of delivery). The laser marking should be visible at the operator.


AC609516

3. When the valve is completely inserted, maintain the TPMS transmitter in contact with the rim, then screw manually the nut until the contact with the wheel.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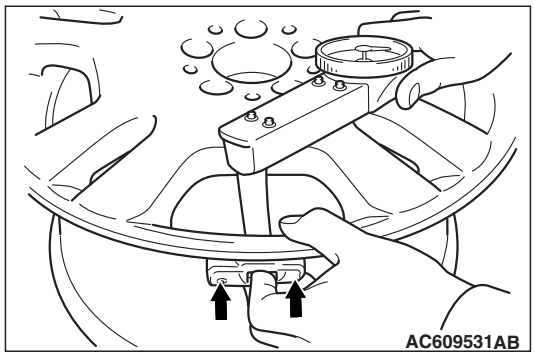
4. While maintaining the TPMS transmitter contact with the rim by applying pressure to the back of the valve, slightly press on the cap to wards the center of the wheel in order to adapt the angle of the valve/TPMS transmitter to the profile of the rim.

   It is mandatory to guarantee the contact of the housing unit on the rim drop center.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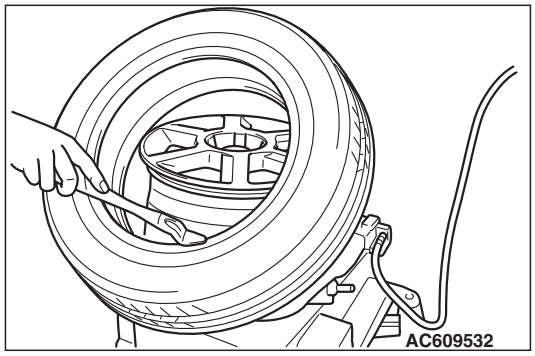
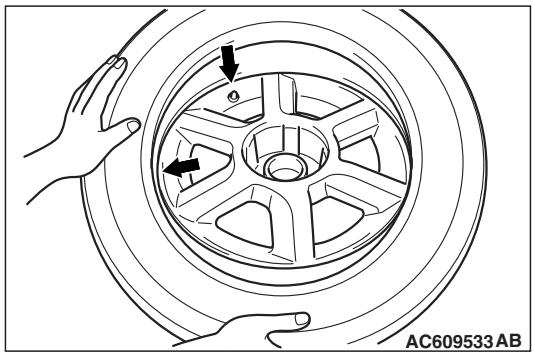
5. While maintaining the TPMS transmitter and valve in position, screw the nut with a torque wrench.
   Take care that the wrench socket is correctly inserted on the nut.
   Specified torque: 8.0 ±0.5 N· m (71 ±4 in-lb)

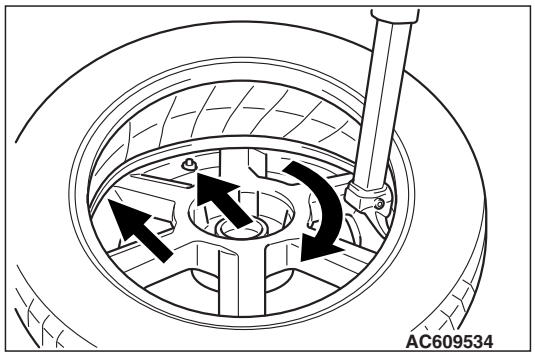
>>B<< TIRE BEAD MOUNTING


AC609532

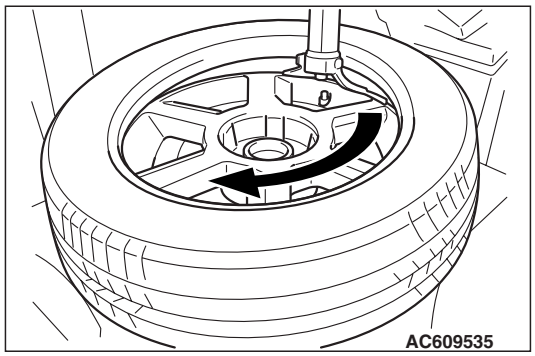
1. Prepare the tire and fix the rim as usual.


AC609533AB

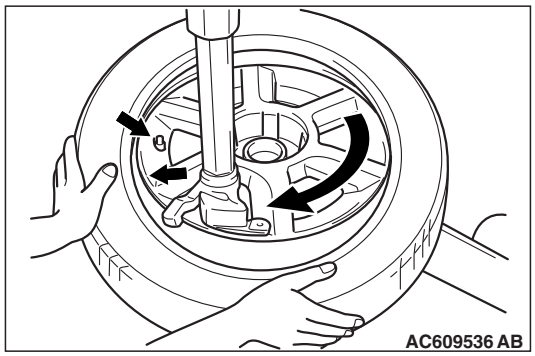
2. Put the tire on the rim, so that the cross point of the belt with the rim is approximately 20 cm (7.9 inch) away from the valve.


AC609534

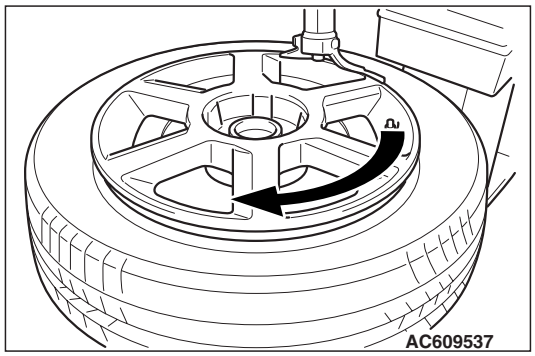
3. Engage the shoe and make sure that 20 cm (7.9 inch) is maintained between the cross point and the valve.
   The arrow shows the direction of rotation of the wheel.


AC609535

4. Turn the wheel in order to engage all the first side of the tire.
   NOTE: The standard shoes can pass over the sensor without damaging it.


AC609536 AB

5. Put the second side of the tire in position, so that the cross point of the belt with the rim is approximately 20 cm (7.9 inch) away from the valve. The curved arrow shows the direction of rotation of the wheel.


AC609537

6. Turn the wheel in order to engage all of the second side of the tire.
   NOTE: The standard shoes can pass over the sensor without damaging it.

>>C<< TIRE PRESSURE INFLATION/NUT RETIGHTENING

⚠ CAUTION

After tire inflation, retighten the valve nut to 8.0 ±0.5 N· m (71 ±4 in-lb). This is necessary, because the TPMS transmitter is secured to the wheel with the valve nut and rubber grommet. The rubber grommet will be depressed by tire pressure or deteriorate over a period of time, which requires the valve nut to be retightened.

Inflate tire to required pressure, then retorque the valve nut to 8.0 ±0.5 N· m (71 ±4 in-lb).